AMERICAN AGRICULTURIST,

FOR THE

Farm, Garden, and Household.

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ORANGE JUDD, A.M., EDITOR AND PROPRIETOR. | ESTABLISHED IN 1842. | $1.00 PER ANNUM, IN ADVANCE. SINGLE NUMBER, 10 CENTS.

VOLUME XX—No. 7. | NEW-YORK, JULY, 1861. | NEW SERIES—No. 174.

☞ Office at 41 Park-Row, (Times Buildings).
☞ Contents, Terms, &c., on pp. 219-24.

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American Agriculturist in German.

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July.

"And soon the jocund dale and echoing hill
Resound with merriment. The simple jest,
The village tale of scandal, and the taunts
Of rude unpolished wit, raise sudden bursts
Of laughter from beneath the spreading oak,
Where, thrown at ease, and sheltered from the sun,
The plain repast and wholesome beverage cheer
Their spirits. Light as air they spring, renewed,
To social labor: soon the ponderous wain
Moves slowly onward with its fragrant load,
And swells the barn capacious; or, to crown
Their toil, large tapering pyramids they build,
The magazines of plenty, to insure
From winter's want the flocks and lowing herds."

We are again at the zenith of the year, when the glory and blossoming of Summer begin to pass into fruit. Already we are gathering the small fruits, and dishes piled with berries, and garnished with sugar and cream, grace the farmer's repast. The cherries, in those sections of the country where they have not been winter killed, stand thick among the green leaves, and the apples and pears are rapidly pushing on toward maturity. The meadow is now in its glory, and all the varieties of grasses are shaking their dewy plumes in the morning breeze. Much of the interest of the northern farm at this season, clusters around the hay field. It has its poetry as well as its philosophy, its sentiment, as well as its dull realities.

There is hardly a more beautiful sight among all the peaceful scenes of rural life, than the meadow at mowing time. Grass is at all times grateful to the eye, and the smooth shaven lawn, with nothing but evenness and monotonous green to commend it, is a perpetual feast. We can find contrasts enough in other things. But the verdure of the meadow has a thousand varying shades, as the grasses come into bloom in mid-summer. Not only are there many varieties of grasses, but each variety gives a succession of hues, as it passes from the blade into the season of ripeness. We have different shades of green, and then as the tassels and plumes come out, different shades of purple, blue, pink, and crimson, blending with the ground work of verdure beneath. Then, to vary the scene, we have these colors modified by the dew and the rain, by cloud and sunshine, by wind and calm. A gentle breeze sweeping over the tall grass, gives one the impression of the waves of the sea. We never thrust a scythe into a full grown meadow, without a sigh that so much of beauty has to be sacrificed to the necessities of man and beast.

But the hay field is pleasing to the looker on, if not to the hay maker, after all its nodding plumes and flowers have gone down before the scythe. We love to see the boys tossing the withered herbage, the rakers gathering up the long windrows, the hay in cocks and covered with snowy caps, looking in the distance like a tented field, the hay cart with its enormous bulk drawn into the barn, the stacks suggestive of barns running over full with fodder, the farmer's nooning—the whole laboring group reclined upon the fragrant hay, the mirthful boys, full of dinner and practical jokes.

Nor is the eye alone pleased with the hay field. No flower border sends up more grateful odors, than the blooming meadow on a Summer morning. It pays for early rising, to inhale the fragrance, as well as to catch the sparkle of the first sunbeams, as they flash from the dew drops. And then, when all the grasses are laid low in death, the perfume that comes up from the crushed blossoms surpasses all that they exhaled while living. "New mown hay" gives a name to one of the most exquisite products of the perfumer, and the Broadway belle is redolent of one of the most common odors of the farm. This fragrance is most perceptible at evening, as the dew begins to fall, and moonlight rides in July are particularly delightful to those who have the leisure to enjoy them.

Sweet sounds are also the charm of the hay field, and cheer the laborer at his task. You will always hear the robin from the adjoining orchard or fence, and the Bobolink pours forth his ecstasy from every weed and shrub that overtops the surrounding grass. The meadow lark and the quail both build their nests among the grass, and their notes are the constant companion of the mower. Then, the murmur of bees among the clover heads, comes up as a subdued undertone, to the varied music of the feathered tribes.

And who that has been bred in a northern home and studied the New-England Primer, with its familiar illustration of old *Time* and his scythe, has not indulged in a bit of sentiment, as he thrust his glittering steel into the grass. What slaughter of living things that the sun has been nurturing into strength and beauty all Summer long! To-day a living host, glorious in their wealth of blossoms, and to-morrow a mass of withered herbage! He thinks involuntarily of the Great Reaper, and the human harvest that Time is always gathering.

To come down from the realms of poetry and sentiment, the hay field is a very matter of fact sort of place, full of sweat and hard work. The scythe compels one to labor in a constrained posture, disciplines new muscles, and is justly regarded as the severest labor of the farm. As a gymnastic exercise, mowing is excellent, and if not too much prolonged, it gives strength to the muscles of the shoulders, the loins, and hips. The fact that one is always lame after the first day of mowing, shows that unused muscles have been taxed. The great danger at this season is of attempting too much. Labor is generally from fifty to a hundred per cent higher than at other seasons, but it is very much better to employ it at any price, than to break down the system by overwork. A strained muscle will often lay a a man up for months. If the labor is more severe than usual, more time must be taken for rest. It is folly to work fifteen or sixteen hours daily, as some farmers do. We doubt if any thing is gained to the employer, in the whole season, by more than ten hours of steady toil. Particular attention should be paid to food and drink. We want good nourishing food, plenty of fruits and vegetables and milk, to break up the monotony of salt junk and potatoes. Some eschew ice water in the hay field. If one is accustomed to it from the beginning of the season, there is little danger in its use. While we approve of good cheer, coffee, tea, syrups, ginger beer, and the wholesome drinks that the good housewife knows so well how to prepare, we discard all intoxicating drinks.

Hay making is an art, and it requires a good deal of experience to know just when to arrest the process, so that the dried grass shall retain its virtues. It is agreed on all hands that it should be cut just as it is passing out of blossom. Later than this, the gum and saccharine matter pass over into woody fiber, and the hay is not so highly relished, and is not so nutritious. In the beginning of the season, when the grasses are full of juice, there is danger of curing too little, so that the hay heats in the mow. In the latter part, there is danger of drying too much. The best hay is made mainly in the cock, and now that we have hay caps so generally distrib-

uted, this may be safely done. Heavy grass, when it has had one day's sun, may be kept in cock two or three days, and improve by the process. Hay is best secured in the barn in large mows. We trust the day is not distant, when farmers will have barn room enough for all their fodder, as well as for their cattle. In the barn the hay remains undisturbed until it is fed out, and retains all its sweetness. In the stack, there is a loss in the quality of the hay, and still greater loss in feeding.

Calendar of Operations for July, 1861.

[We note down sundry kinds of work to be done during the month, to call to mind the various operations to be attended to. A glance over a table like this will often suggest some piece of work that might otherwise be forgotten or neglected. Our remarks are more especially adapted to the latitudes of 38° to 45°; but will be equally applicable to points further North and South, by allowing for latitude.

EXPLANATIONS.—*f* indicates the *first; m*, the *middle;* and *l*, the *last* of the month.—Doubling the letters (*ff*, or *mm*, or *ll*,) gives particular emphasis to the period indicated.—Two letters placed together, as *fm* or *ml*, signify that the work may be done in either, or in both periods indicated; thus, work marked *fm*, indicates that it is to be attended to from the *first* to the *middle* of the month.]

Farm.

It is of great importance that corn, potatoes, and other hoed crops be put in the best possible condition before haying and harvesting—the main work of this month. When the grass and grain claim attention, all other operations are put aside, and if the weeds have not been subdued, and the soil left properly loosened, corn must suffer. An additional hoeing early this month, may make five or ten bushels per acre difference in the yield.

It is poor economy to attempt the severe labors of the season with insufficient working force. Overworking during the oppressive heat of Summer is even more injurious than at other times. There may be scarcity of help in some sections, owing to the large numbers engaged in the war, but the absence of men should be supplied, as far as may be, by using labor-saving implements.

Barns and Sheds—If not in order to receive the hay and grain, no time should be lost in repairing them. Where there are not buildings enough to receive the crop, erect temporary coverings for stacks.

Buckwheat—A good crop will add much to the supplies for the house and the feed bin, and will command a ready market, if not wanted for home use. Sow, *ff*, *m*. Read article on page 203.

Butter—To produce a good article at this season, a cool well ventilated dairy room is indispensable. Exclude flies from the premises with frames covered with millinet, placed in the doors and windows. Observe scrupulous neatness in every operation. The tub or barrel for the reception of sour milk should be kept at a distance from the dairy, and convenient to the pig pen. The effluvia from a fermenting swill tub will injure the flavor of butter.

Cabbages for the latest crops may be planted, *ff*. Set them between rows of early potatoes, which are soon to be gathered. Manure the ground well. A good dressing of ashes and salt is often useful.

Cheese can be made successfully where there are not necessary conveniences for making good butter in hot weather. Read articles on page 206.

Draining—If there be leisure between haying and oat harvest, employ it in improving open ditches which may need it. The work is better done during the dry weather of Summer. Lay tile or other drains where needed most. This improvement may be introduced gradually. Read the articles on the subject now in course of publication.

Fences—Keep in good repair, particularly around fields where young cattle are confined, and adjoining corn and grain lots which tempt animals to break from the pasture.

Grass and Clover Seed—Select the best growth of clover, timothy, etc., and leave it to ripen for seed. Choose a piece as free from weeds as possible, and pull out foul stuff before gathering the seed.

Haying will commence in this latitude early in July. Commence with clover, if not already secured, and cut as the different fields are just passing from bloom. Put up the hay in small cocks before it is entirely dried, and cover them with hay caps. This should be done early in the afternoon if practicable, while the hay is heated by the sun; much of the heat will be retained, and greatly assist in curing the hay. Banish the whiskey jug from the field, and allow ample noon rests. If hay must be stacked, lay a good platform of rails or slabs to keep it from the ground. In stacking let the successive loads be thrown on from different sides, to prevent uneven settling and leaning of the stack.

Hedge-rows and bushes in pastures or other fields, if cut repeatedly during hot weather, may be finally destroyed. Follow it up in July.

Hoeing should be completed before haying is commenced; but an occasional day of poor hay weather may be improved by going through parts of the cornfield where weeds are encroaching. If severe drouth should occur, it would pay to use the horse-hoe or cultivator to loosen the surface of the ground. Deep tillage should be avoided after the corn roots have extended across the rows.

Ladders—Much time and trouble will be saved by having convenient ladders for ascending to sheds, lofts, and upon hay stacks. Make them in rainy weather in the farm work-shop, if you have one.

Manures—Large additions may be made to the compost heaps by cutting coarse swamp grasses, and weeds which are unfit for fodder. Cut them before the seed is formed, otherwise many will ripen and be scattered over the farm with the manure. Decomposition goes on rapidly aided by the heat of Summer, and sink slops, contents of privies, etc., will be offensive unless plaster, muck or other absorbents are used to retain the escaping gases. Remember that every ounce of ammonia lost, is equivalent to the loss of perhaps a bushel of grain.

Oats—Cut at earliest maturity as directed for wheat and rye. If they be too short to bind well, use rye or wheat straw. Store them where there is good ventilation. Clean bright oat straw is very valuable for fodder.

Pastures—Do not allow them to be fed too closely. If the roots of grass are unprotected from the scorching heat of Summer, it will die out rapidly. A plot of early sown rye, sorghum, or corn, to be cut and fed this and the next month, will aid in keeping both pastures and stock thriving.

Poultry—Keep them from the grain fields until after harvest, then allow them to glean. Collect the eggs daily, and allow no hens to sit at this late season. Fall chickens are seldom worth raising.

Potatoes—Do not disturb them after blossoming. If the potato fly (*Cantharis vittata*) is injuring the vines, many may be destroyed by two persons sweeping the field with a sheet held by the four corners, in the form of a bag. Destroy the insects when collected, by scalding. When dried, they are medically useful for drawing blisters. Dig early varieties as they mature, and sow turnips or set cabbages in their place.

Rye—Cut as soon as the grain is passing from the milk state, or when it is sufficiently hard to bear moderate pressure with the thumb nail.

Seed Rye, Wheat, etc.—Leave the best parts of the field to ripen fully for seed. Remove all weeds before gathering, and thresh as soon as practicable after harvesting. Read article on page 208.

Sheep—Keep in thriving condition by good range of pasture. They may be used to advantage in subduing fields overgrown with briers. Visit and salt weekly. Watch against the appearance of foot rot and other diseases. Read article, "Rot in Sheep," page 205.

Soiling Crops—Sow millet and corn, to be used for soiling late in the season. What is not needed for feeding green, may be cured for winter fodder.

Swine will find abundant feed in the harvest field after the crop is removed. Let them glean what has escaped the rake. Insert rings in their noses if needed, to prevent injury from rooting. Those confined to the pen, should have access to clear water in addition to the wash of the dairy, and grain enough to keep them in good condition; they will fatten more readily in the Fall.

Timber cut during this and the following months is generally considered more durable than when felled in Winter, particularly those kinds which abound in sap. If practicable, secure enough for next season's wants for fencing and building.

Tanner's Bark—Hemlock and oak bark will "run" during most of July, and may be peeled at any time unoccupied by other labor.

Tools—Before commencing work with reapers, mowers, threshers, etc., see that every part is in good order; a little neglect may cause vexatious delay. Keep all bearings well oiled, and knives properly sharpened. If the mower is left in the field over night, cover it with tarpaulin, oil cloth, or other protection from dew and rain. Improve rainy weather by repairing implements needing it.

Turnips—Sow largely, *f*, *m*, before the 20th if practicable, but later if necessary; a good supply of these and other roots will be appreciated by stock next Winter, and will save hay and grain.

Weeds—Canada Thistles, Snapdragon, and other persistent weeds should be taken out by the roots. Cultivating a field with buckwheat will aid in subduing them. If nothing more can be done, mow them before they pass from bloom. If left after this period, many seeds will ripen on the stalk after cutting. Any weed may be destroyed by repeated cutting close to the ground, but it must be followed up through the season to be effectual. In the case of thistles in pastures, a little salt dropped on each stem after cutting, will attract animals to work about them, and keep down the young shoots.

Wheat—Cut as directed for rye. If for seed, pick out weeds from the grain as it lies in the swath. The market price of this grain is much injured by the presence of cockle or other foul stuff.

Orchard and Nursery.

Though July is a busy month with the farmer, yet the orchard should not be neglected. There is comparatively little to do in this department, except pruning the trees, but whatever requires attention should be done at the proper time, here, as elsewhere. The trees should now be growing rapidly, and it is important that nothing obstruct this growth. Keep grass and weeds away from the trunks, and if they are inclined to barrenness encourage the development of fruit buds. This may be done in several ways. One is judicious root-pruning; another method is to bend down the outer branches and tie them to stakes. This compresses the sap vessels, and tends to the formation of fruit buds. A third method is to bind a rope or strap firmly around the trunk or main branches of the tree to stop a portion of the returning sap and force it into blossom buds. Shortening in the extreme growth of the present season tends to the same end, and improves the appearance of the tree.

The regular annual pruning should now be attended to. If this has been properly performed each year, the labor will not be heavy, nor will any other instrument than a good pruning knife be needed. If, however, the orchard has been neglected, a fine tooth saw, sharp knife, and coating cement should be provided. We esteem the early part of this month the very best time to remove large limbs. Pare the sawed portion with a knife and coat the wound with gum shellac dissolved in alcohol to the consistence of thin molasses.

The ripening cherries are now furnishing the first tree fruits of the season. Unfortunately the severe Winter and late Spring frosts injured the trees so that the crop is light in most places. Bottle a portion of the fruit as recommended on page 215. Save pits for nursery planting and put in boxes of earth at once.

Thin the choice apples and pears, especially if grown on small trees. Better pluck all but one or two specimens from trees set last Spring.

The nurseryman will begin to bud plum, cherry

and pear trees by the middle of the month. Use every precaution in securing true sorts, and mark the rows carefully. Insert the buds close to the ground. It is not necessary to remove the wood from the bud. Stocks budded last season, may now be rounded off close to the growing bud. See that all suckers are removed.

Inarching may now be performed on both deciduous and evergreen trees, and quinces and other shrubby plants be increased by layering new wood.

Insects are now troublesome, unless they were kept in check as advised last month. Continue to dust plum trees with lime, or syringe with the oil soap mixture, to repel the curculio. Make friends of the birds, even if they do take a few cherries. See article on apple borers, page 209.

Plow, or run the cultivator between nursery rows, to loosen the soil and keep down weeds. The hoe will also be needed for the same purpose.

Kitchen and Fruit Garden.

One pleasing feature of this department of home labor is the quick returns received. Seeds of vegetables sown in Spring, are already yielding the first fruits of the garden, and as the season advances, each month brings its increase. There is danger that the garden may be neglected in the busy season of haying and harvest; but no part of the homestead pays better, especially if well worked. Do not leave hoeing, weeding, transplanting, etc., until some chance leisure hour, but *take* time at the right season for all operations needed to make a productive garden.

Asparagus—Now that the cutting season is past, allow no bed to become a nursery of weeds.

Beans—Gather for use as they ripen. "String" beans or the young pods cooked with pork, are generally relished. A few quick growing kinds, as Early Valentine, Refugee, and China, planted *ff*, will yield a supply for use late in the season, and for putting up in bottles for Winter.

Beets—Keep the rows well hoed. Thin to eight or ten inches apart in the row.

Blackberries—Train the new growth to stakes or trellises. When five to six feet in length, nip off the ends of the new growth, to facilitate the setting of fruit-bearing buds. Support branches heavily loaded with ripening fruit, to keep from splitting.

Cabbage and Cauliflower—Set out, *ff*, *m*, for latest crop, and sow seed for plants to be wintered in pits. In gathering early cabbages for table use, cut off the heads, and leave the stumps standing; the new growth of sprouts will furnish excellent greens.

Celery—Transplant for late crops, *ff*, as directed in Calendar for June. Hoe former plantings often.

Corn—Plant, *ff*, for late use, and for drying and preserving for Winter. Hoe often about former plantings.

Cucumbers—Plant, *ff*, for pickling. Hoe former plantings, and water occasionally with liquid manure, either house slops, or poultry, or cow droppings mixed with water. Guard against insects. Pinch off the ends of vines to prevent too rampant growth.

Currants—Gather as they ripen for table use and for preserving. They are wholesome eaten fresh with sugar, if every berry be broken before swallowing. For jelly, use when fairly ripened. For preserves or wine, leave until fully matured. After fruiting is passed, prune the bushes, cutting out old wood, and as much of the new as necessary to keep in good shape. Remove all suckers which spring from the roots; otherwise there will soon be a hedge-row formed. Watch against insects, particularly the currant aphis, and the borer.

Egg Plants—Keep well hoed and hill up slightly. Forward the growth with liquid manure.

Espaliers, or trees trained to trellises or against walls, are ornamental on the borders of the garden. Pinch out all growth that interferes with proper shape, and keep new shoots well trained. Thin the fruit if necessary, before it has attained much size; the remaining specimens will be improved.

Gooseberries—Thin the fruit if the bushes are well filled, and use the first pickings for cooking. Keep the ground mulched to prevent mildewing.

Grapes—Continue to remove superfluous growth. Leave but one, or at most, two clusters of fruit on a spur, and pinch off the ends of bearing shoots four or five leaves beyond the berries. Remove insects by hand picking. Keep the border free from grass and weeds. Mulching is beneficial.

Herbs—Cut while in blossom, dry them in the shade, and preserve in tight boxes, cans, or bottles.

Hoeing frequently will partially make up for want of manure and rain. If the ground becomes crusted, it shuts out air, warmth, and moisture.

Insects require constant watchfulness, particularly upon melons, cucumbers, cabbages, and turnips. Study their habits, experiment to prevent their ravages. He will be a fortunate discoverer who can find a perfect safeguard from the pests. Our principal reliance is on toads and chickens.

Lettuce—Sow at intervals for a succession. The Silesian is valuable for late use.

Manure—Growing plants will be benefited by hoeing in an occasional top-dressing of ashes, plaster, bone dust, guano, etc. Very rapid growth of almost all garden plants may be induced by frequent watering with liquid manure. A shovelful of poultry droppings dissolved in eight gallons of water, will make a strong fertilizer.

Melons—Cultivate as directed for cucumbers. As the fruit enlarges, support it from the ground with a small strip of board.

Mushrooms—Collect necessary materials for Autumn beds, *m*, *ll*, as we have formerly directed.

Onions—Keep the beds free from weeds, and the soil loose. Try a weak solution of oil soap, a pound to eight gallons of water, upon a small plot, if troubled with the onion maggot. Thin the plants if crowded; the young growth may be used in salads. Sow seed, *ll*, for small bulbs to set next Spring.

Peas—Sow, *f*, *m*, *l*, for late use. Pick from former plantings as they grow to proper size, but leave the earliest and finest pods to ripen for seed.

Potatoes—Dig early varieties, and devote the space to turnips, late spinage, etc.

Preserving Fruits and Vegetables—Read and follow directions on page 215, of this number.

Raspberries—If more fruit ripens than is wanted for immediate use, dry it, or preserve in bottles. When fruiting is over, cut down old canes. Remove all but two or three of the strongest young shoots, and train them to trellises in fan shape, for next year's fruiting. Keep the ground around them well hoed, but do not disturb the roots.

Rhubarb—A good supply for Winter use may be dried, or better, preserved in bottles. For drying, cut the stalks into pieces, and string them on twine.

Seeds—As Turnip, Cabbage, and other seeds ripen, select the earliest and best growth, as fast as it matures, and dry on sheets or newspapers in a loft or other secure place. If neglected until all is ripe, much of the best growth will be wasted. When sufficiently dried, put up neatly in papers—old envelopes are good for this use—mark each package plainly, with the name and date of growth, and keep secure from dampness and mice.

Spinage—Sow, *ff*, *m*, for late use. Leave enough plants of early growth, for seed.

Strawberries—As soon as the last fruit is gathered, weed and thin the beds, and transplant young rooted plants for new plots. Culture in hills or rows is generally recommended. To keep them in proper bounds, clip the runners as they appear. Ashes worked into the soil will be beneficial.

Thin out old plants which are crowded, and pick off melons, tomatoes, etc., which set too late to ripen. Those left will be all the better.

Tomatoes—Train to trellises of lath, or support with frames of poles, or brush, as for peas. When a fair quantity of fruit is set, nip off the ends of the vines to prevent further growth, and allow the sap to perfect the fruit.

Transplant to supply vacancies in rows of corn, hills of melons, etc. By following directions given in previous numbers, this can be done successfully in the hottest weather.

Weeds disfigure the garden, and injure the growing crops. Keep them under by frequent hoeing, and by mulching with straw, tan bark, leaves, etc.

Flower Garden and Lawn.

The cold wet weather of May and June prevented many seeds from vegetating, and retarded the blooming season of many perennials. Still, the flower borders should now be rich in bloom, for while the early sorts still linger, the later varieties are unfolding. July is a growing month, no less for weeds than flowers, and hoes, rakes, and fingers will all be needed to keep the borders in good condition. Now is the time to train the rapidly growing shrubbery to proper form. Pinch back the leaders if a more compact head is wanted; prune off lower side shoots to increase the hight, when desirable.

Annuals of quick growth may still be sown, *ff*, to take the place of early blooming plants. The most of them will flower before frost, even if they do not ripen seed. They will also help to lengthen out the floral season. Soak the seed over night to make them vegetate quickly.

Box edgings may now receive their final shearing. Cut to a line stretched at the top, and pare the sides to nearly a cone shape, but do not shave too closely, or the hot sun will burn the plants.

Bulbs—Those which are to be reset, should now be lifted, *ff*, dried, and put away in drawers or wrapped in papers and carefully labeled. It is not necessary to transplant them every year.

Carnations, Picotees, and Pinks, should continue to receive the care recommended last month. They should make a fine show now. Slit the sheath of those flowers which burst upon only one side.

Climbers—See that they are provided with supports. Most of them will follow a string or wire better than any thing else. A small cedar or juniper tree, with the bark and outer branches removed, is made quite picturesque when covered with some climber, filling and drooping from the branches. The climber can be kept in bounds by pinching.

Dahlias may still be set for a late bloom. Keep well tied to stakes and cut off lower side branches, leaving a single stalk to a hill. Watch for and destroy borers which are now penetrating the stalks.

Evergreens make much of their growth in July, and are particularly ornamental at this period. No lawn or ornamental ground is complete without a collection of them. They are beautiful at all seasons, and fine for the "Winter garden." Now is the season to prune them. If to make stately trees, leave the leader uninjured, but when desired to form shrubs, both the upright and principal side shoots may be pinched in.

Flower stalks should be cut down as soon as they have finished blooming, unless seeds are wanted. Annuals may be sown or transplanted near them, that no space be wasted.

Geraniums are in full flower, and if well arranged, make a fine show. The Tom Thumbs answer admirably for bedding out. Both layers and cuttings may now be made. They take root very readily from cuttings, and this is the proper season for starting a supply to bloom in the houses next Winter. Shade from the hot sun, and water freely.

Gravel walks—Pull the weeds by hand, or run a scuffle hoe beneath the gravel.

Hedges—The first clipping should be finished, *ff*. Cut evenly and to a line upon the top, leaving them a little cone shaped. Do not trim from the sides near the bottom at this season, as the object now is to thicken the hedge. Thin places can soon be filled up by judicious pruning.

Hoe grounds often. Even if there are no weeds, the soil should be frequently stirred with a hoe or rake, to prevent crusting. Use a push hoe and walk backwards, which will leave the weeds loose upon the top without any footprints; remember that even in dry weather, a good hoeing is frequently better than a watering, which bakes the surface.

Insects are now troublesome if they have not been kept in check. The favorite multiflora, or choice souvenir rose, looks as though scorched by a fire. An examination discloses multitudes of greenish worms or slugs upon the leaves, eating out the tender portions. Sifting air-slaked lime, or fresh wood ashes over the bushes each morning, while the dew is on, will soon destroy them. A still better application is one pound of whale oil soap to six gallons of water. Apply with a syringe or watering pot twice a week, until they disappear. The same solution will drive away the small leaf-hoppers, often quite troublesome.

Lawns and Grass Edgings—Mow or shear once a fortnight, to keep a thick, green bottom. If the short grass is left evenly spread upon the surface, it serves to protect the roots from the sun, is soon hidden by the new growth, and its decay eventually enriches the soil. Do not let the turf encroach upon the flower borders, or grow too closely around newly planted, or even established trees. If suffering from dryness, a hydropult, or other sprinkler, may be used to advantage, sprinkling with the waste wash water, or with liquid manure, well diluted with water if it is dark colored and strong.

Layers of new growth may now be put down; they will probably root sufficiently to be removed in the Fall or Spring.

Potted Plants—A few plants probably remain in their pots, and were only brought from the houses for sunshine and fresh air. Whether sunk in the earth, or standing upon the ground, the pots should be turned around occasionally, else the roots will penetrate through the hole at the bottom, and fasten into the soil. They will also require more water than plants growing in the open ground. See that they are sufficiently protected from high winds.

Pruning should be completed early this month, especially the shortening in, that the after growth may have sufficient time to harden before Winter. Late pinching produces a late growth, which is full of crude sap when cold weather comes on. Such plants winter-kill badly. See fuller directions for lawn trees, under "Orchard and Nursery." With shrubbery, the chief object is to give shape, thickness, and develop flower buds. Various curious forms can be given to trees and shrubs by peculiar pruning. See illustrations, p. 176, June *Agriculturist.*

Rhododendrons which have made a magnificent show for several weeks past, are now nearly out of bloom, and are growing finely, preparatory to the formation of new flower buds. Keep the ground free from weeds, and well stirred about the plants.

Roses—The fragrance of the June sorts, and showy clusters of Climbers have scarcely passed away, while Hybrid Perpetuals still exhibit a richness and profusion of bloom. By cutting back freely, a second bloom is often obtained, even from those which usually flower but once in a season. Remove all flower stems as soon as blooming is past. This is the appropriate season for budding. A fine effect is produced by budding several sorts upon one bush. Layers put down now will root before Fall. Cut half way through from the *upper* side of the layer, and there will be little danger of breaking. Keep pillar and climbing varieties tied to stakes or trellises. Use the oil soap solution to destroy slugs and leaf hoppers. he rose bug dislikes the odor. Prune those trained as standard or tree forms, and head back pillar and climbing sorts.

Salvias and Heliotropes make a good show of bloom at this season. They can be pegged down and spread so as to form a mass of flowers.

Seeds—Some of the early blossoms are ripening seed, which should be gathered—some sorts every other morning, before being wasted on the ground. Perennials sown now will bloom freely next season.

Stake or otherwise confine all tall growing plants liable to be broken down by high winds.

Thin plants requiring it, remembering that a shrub or flower can not fully develop itself when crowded. Beginners usually leave them too close.

Transplant annuals, perennials, etc., sown last month. Set in places occupied by early bloomers now decaying, thus using the ground twice.

Verbenas—These admirable bedding plants now show a mass of bloom, if properly arranged and spread by layering and pegging. The ground may be entirely hid beneath a mat of flowers and foliage. Continuing in bloom all Summer, of various tints and hues, the verbena is a universal favorite. Now is the time to provide a good stock, by layers or cuttings, for blooming in-doors next Winter.

Water must be given occasionally to trees and shrubs set in the Spring, also to herbaceous plants. Frequent stirring of the ground will do much toward bringing up moisture from the soil, and it assists in absorbing dews. As often applied, water does little good; a pail of water dashed upon the ground soaks in very little, while it helps to bake the soil. Scoop out a hollow about the tree or plant, pour in the water from a spout or sprinkler, and when soaked in, return the surface soil.

Weeds will not, of course, be tolerated among flowers by good gardeners.

Green and Hot-Houses.

Little more than bare walls is to be seen, except in propagating houses, the contents of most of these buildings having been transferred to the open grounds, some of them turned from, and others still growing in the pots. Those who raise plants for sale, still find it convenient to use the houses for striking cuttings, as they can better control sunshine and shade, moisture and dryness, and guard against the extremes of temperature. In striking cuttings of succulent plants, for instance, there is so much evaporation from the leaves and stem, that it draws heavily for nourishment before roots are formed. A glass structure confines much of this moisture, and a hand-glass covering is an additional protection. Care must be exercised not to admit the direct rays of the sun through ordinary glass. If the glazing is corrugated, it will probably be sufficient, otherwise a coating of gum arabic, or glue and whiting must be applied to the glass, or a muslin screen stretched over it. The walls and floors should be syringed frequently to keep up a humid atmosphere, and the ventilators and doors be kept open most of the time. Future wants should be anticipated, and large numbers of cuttings of the leading varieties be put in for a stock of Winter blooming plants.

Callas—Repot towards the latter part of the month, watering less freely.

Cissus, and other trailing, or climbing plants should be arranged in suitable positions for training. They should be near the glass.

Grapes—Some of the houses have already ripened their crops, and the plants should be checked in growth preparatory to a period of rest. A dry atmosphere, and dryness at the root will soon stop their growing. Those plants which have received less forcing will need some attention now. The ends of bearing shoots may require still further pinching in, and some of the clusters should be thinned again. Water and syringe freely. Use sulphur upon the first appearance of mildew. Keep well ventilated.

Insects of all kinds need especial looking after now. The whale-oil soap solution will prove sufficient in most cases, although it may sometimes be necessary to resort to tobacco fumes.

Orange and Lemon Trees should now be budded, *ff*, if not already done. Water bearing plants freely and thin fruit as needed.

Potting soil should be provided in ample quantities for next Fall and Winter. It is better to keep a year's supply on hand, as it improves with age. Many seedling and other plants are now ready for potting, and they should early be put into suitable pots, of small size at first, changing to larger ones as they increase in growth.

Prune plants, *ff*, *m*, to bring them to good form. With some of the plants the old wood requires cutting away to renew the growth.

Seeds—Gather any ripening, and save with care, except such as may be planted at once.

Water—Give copious supplies during the warm, dry weather of this month, sometimes both morning and evening. Wash freely with a syringe.

Apiary in July.

Prepared by M. Quinby, by request.

As the Summer here (Montgomery Co., N. Y.,) is more backward than usual, we expect the swarming season to extend very far into July. This in itself is not discouraging: as long as the bees can avail themselves of all the flowers which come into bloom in succession, and lose no time by rainy weather, it makes but little difference whether they gather the honey of the apple blossoms the 10th of May, or the 1st of June. Swarms may be considered early, two weeks after apple blossoms are gone.

The surplus honey boxes should now receive particular attention. They should be removed as soon as the cells are generally sealed over, without waiting for the few on the edges to be finished, as some of them may not be closed for a month. Combs grow darker the longer they remain on the hive. When the bees have a full harvest, boxes should be examined often. Replace with empty ones as fast as filled, for the purpose of giving the bees room to work, as well as to have the combs pure. All the *best* honey will be stored by the last of July; what is obtained late, will be in small quantities, and if any is stored in the boxes, it is done so slowly that it is of dark color. In the vicinity of buckwheat, boxes may be rapidly filled, but the honey itself is dark and inferior, even if stored in very white combs. Boxes not quite full of white honey are worth more in market than if filled out with that from buckwheat. On removing boxes from the hive, when bees are getting honey plentifully, they may be set down near the entrance—not in the hot sun—and the bees will readily creep out in a short time, without returning to carry off the honey; though when the supply has failed wholly or partially in the flowers, they will, if allowed, take it all. To prevent this, put the box on its side—combs vertical—in a box or barrel, cover with a thin cloth, turn it over occasionally as the bees gather on the under side, until they are all gone.

Three weeks after the first swarm, is the time to examine for diseased brood; when present, drive out the swarm to begin anew. When the combs are old enough to make pruning necessary, this is the time to do it. It is important that all old stocks have a queen; a week or two later than the above period it is time to find some indication of her presence. It is readily ascertained with the movable comb hive, by lifting out a frame or two in the center. Brood or eggs, are conclusive of her presence. With the box hive, when no immature brood is discovered on the floor, or about the entrance, turn it over, and look down near the center of the hive on the sides of the combs, for sealed brood, driving the bees out of the way with smoke. When a hive, otherwise very good, contains no queen, break up some poor colony containing one, and supply the queenless stock.

When from any cause bees are reduced so as not to cover the combs for a long time, the worms will be quite sure to destroy them; and if a colony of this kind can not be reinforced by some means, the contents—honey and wax—should be secured in advance of the moth, even if the few bees are wasted. Those who use the movable combs, can often add strength to a weak stock or a new swarm, by taking a comb filled with sealed brood from a strong colony, and introducing it. Protect it from a chill, by throwing over the hive an old blanket during cool nights before the brood hatches.

July and August produce more moth worms than we find all the rest of the season. There is no danger from this cause, to strong healthy swarms, but the weak ones suffer. Under the small swarms, half full, lay some old pieces of dry comb; the worms will gather around these, which may be taken out occasionally, and the worms destroyed. Set shallow dishes filled with sweetened water, among the hives at night, for a few weeks. Give the moths that drown in them to the chickens. This liquid grows better as it gets older. Add a little water and molasses occasionally as it dries away.

Our Basket

Into which are thrown various useful or interesting Items, Replies to Questions, Extracts from Letters, Gleanings from other Journals, etc.

Read the Chapters on Draining.—However imperfect may be our articles on Draining, the subject is one of the highest importance, and no one can fail to get some useful hints and suggestions from what is said in these chapters. The first articles should be read by those who have as yet omitted to study the earlier numbers of this volume, beginning with February, page 36. The day is not distant, when he who does not understand and practice thorough draining, will certainly be far in the rear of the front rank of *successful* cultivators.

The Special Premiums, of new Wheat, Turnip Seed, and the Barometer, which are seasonable this month, will be found on page 220. A few Special Book Premiums will be found on the last page. The Standing Premiums for the volume are continued on page 218.

Advertisements of Good Articles by reliable parties, will be found on pages 219, 221, 222, and 223.

Sale of Jonas Webb's Sheep.—Owing to the infirmities of age, and a desire to retire from active pursuits, Jonas Webb, the most noted breeder of sheep in the world, has decided to give up breeding South Down Sheep, and he has announced for sale at Public Auction, without reserve, his entire flock of about 1000 head. The sale will commence July 10th, at his residence, Babraham, England.

Try Hay and Grain Caps.—We wish our readers would try these excellent implements this year. Get coarse sheeting; 1¼ to 2 yards wide; tear it into square pieces, and rough hem them; sew upon each corner a cord to form an eye or loop; provide sharpened stakes a foot or so long; spread one of them over each cock of uncured hay or shock of grain, fastening it down at the corners with the wooden pins; then sleep soundly if it does rain. These caps, without any preparation, if put on in the form of a tent, will shed off the rain, and allow the hay to cure beautifully, and the grain to dry out at pleasure. They will last for years; and generally pay for themselves each year.

Salting Hay.—This is a well established practice among farmers, and is of use if the hay is not fully cured when housed. We prefer to have hay well cured, without salt, and this can always be done, now that we have hay caps to guard against storms. Salt has a preserving quality, but the hay may be so green as to heat in spite of it, or so much coarse salt may be used that it will not all be dissolved. Fine salt is better than coarse, as it can be more equally distributed through the mass.

American Herd Book, Vol. V—Containing Pedigrees of Short-Horn Cattle, with Introductory Notes, by Lewis F. Allen, Black Rock, Erie Co., N. Y. This standard work is of great value, indeed, indispensable to to breeders of Short-Horn or Durham Cattle, and is so well known that we need say little more than to merely announce that it is ready for delivery. Both this and the preceding volumes should be in the archives of all Agricultural Societies where Short-Horns are bred and exhibited, for reference in deciding upon the points of blood of competing animals. It can be obtained by forwarding to Mr. Allen, as above, $5.00, or $5.40 if the book is to be sent by mail. The three previous volumes can be had for $11, or the four for $15. The first volume is out of print.

"United States Mail" is the name of a valuable monthly Journal, published at New-York by the Editor and Proprietor, J. Holbrook, the well known Special Agent of the Post Office Department, who has probably had more to do with ferreting out Post Office robberies, than any other man in this country. He is the author of an interesting book entitled "Ten Years among the Mail Bags." The journal is filled with a great variety of useful information in regard to all matters connected with the Mails, Post Offices, etc. Terms, $1 a year. Address '*Publisher* of United States Mail, New-York."

Bee Books.—E. E. Brown, Jones Co., Iowa. Langstroth's Hive and Honey Bee, ($1.25,) and Quinby's Mysteries of Bee Keeping, ($1.00,) are both good books, which will give you the desired information. We can send them post-paid on receipt of price.

War Book.—"A Manual of Military Surgery, or Hints on the emergencies of field, camp, and hospital practice, etc., by S. D. Gross, M. D., Professor of Surgery in the Jefferson Medical College of Philadelphia," is the title of a valuable little work for the times, published by J. B. Lippincott & Co. Price 50 cents.

Chess produced from Wheat by Sheep, etc.—Among the multitude of claims for the chess premium, Mr. John W. Puffer, of Kewaunee Co., Wis., sends in the following, which we will put "on record:" Sow winter wheat in Spring; let sheep feed it down during the Summer; and the next year it will yield a crop of chess—Let those who have faith enough try this method....William Eckly, of Genesee Co., Mich., makes a similar claim....N. N. Hartzell, of Hancock Co., Ill., says he has been successful by two somewhat similar processes, and asks for the premium.—1st, he mowed the wheat down after it was in joint or stalk, and it grew again and headed to chess at six inches high.—2d, he covered the wheat with a plank until yellow, and then cut it off, preparatory for a growth of chess.

Wheat and Chess—*Final answer for the Present.*—We are compelled to beg a "truce," and "retire from the field" for the present, that is so far as replying to the letters fired at us by companies, regiments, and whole brigades. We begin to despair finding storage room even, for these missives that continue to come faster and thicker than ever. A simple offer of a premium of $500 was made to the first one who would go to work and ascertain by repeated experiments, just how wheat can be made to produce chess, *if* it can be done; to ascertain this so definitely, that we and others can repeat the experiment and produce the same result. We want to grow a crop of chess, (*not shrunken wheat*) from good wheat-seed, if it can be done. *When* this is accomplished, the $500 will be ready, and cheerfully paid. This plain straightforward offer has called forth a host of applicants, many of them *demanding* the premium on the strength of being able to prove that sometime within the last twenty years they have found chess growing where it could only have come from wheat. The offer was made on no such easy terms. If it is not large enough to stimulate the transmutationists to make new and careful experiments, such as will establish the fact, and definitely ascertain how the thing can be done, and repeated with success, we will double or triple the amount—but not for any half-way guess work. While such experiments are being made, please let us have a truce in the useless letter contest.

Can't do It—Lotteries.—Several persons write that they have purchased Lottery Tickets through dealers in Wilmington, Del., which, they are sure, drew prizes; but the dealers refuse to send them the *full* report of the drawings, or to answer their inquiries. The best of the joke is, that some of these persons write desiring *us* to interpose in their behalf, and even offer us half of the receipts for our trouble.—Can't do it, gentlemen; we could not consistently use the money obtained from such sources; and besides, there would be little hope of getting it. These lottery dealers are sharp, unprincipled chaps, up to any dodge; and any one who would trust to their forwarding a prize, even if drawn, must pay whatever he invests, for his information. *There is not a lottery in the country that is not an unmitigated swindle!* And such a thing as an honest dealer in lottery tickets is not to be found *this* side of the hot regions! What they have down there, can't tell—and hope never to know.

Lime and Barn-Yard Manure together.—A subscriber asks if in the use of lime and manure in Autumn or Spring, they may be applied at the same time. We answer, generally not. Manure from the yard is usually somewhat decomposed, and the decay will go on fast enough without the aid of alkalies. Lime, ashes, or other alkalies, act beneficially by decomposing unfermenting organic matters in the soil, such as small roots, peat, muck, etc., and fitting them to nourish growing plants. Fresh lime, or ashes, mixed with manure, decompose it too rapidly. When both are to be used, it is better to apply one to the soil at a time, and thoroughly work it in with a plow or harrow. This may be done in Autumn or Spring. Then, at the latest period before using the soil, work in the other; if lime were used at first, apply the manure; and, *vice versa*, apply the lime if the manure were previously used.

Transient Showers and Draining.—John P. Cone, Atchinson Co., Kansas, asks if draining would not be detrimental, when only transient showers fall, at long intervals, as happened in Kansas last year. Doubtless temporary injury would result; yet the constant deposit of moisture from the air circulating through the drains, and up through the soil, would more than counterbalance the occasional cases like those referred to.

Depth of Milk in Pans.—The best depth for setting milk in pans may be ascertained by making a considerable number of experiments like the following, related by a correspondent of the Homestead: He set twelve quarts of milk in each of two tin pails, of such size that the milk stood *ten inches deep*. Total weight of milk 47 lbs. 10 oz. The next day the same quantity of milk from the same cows was put into pans at a depth of *two inches*, and placed on shelves by the side of the pails, the temperature of the room being about 50°. In four days the first milk was sour, and on being skimmed, gave 3 lbs. 2 oz. of cream, which, after standing one day, yielded 24 ounces of butter. The milk in the shallow pans, after standing four days, gave 4 lbs. 8 oz. of cream, which yielded 33 ounces of butter, or 9 ounces in favor of shallow pans—equivalent to 37½ per cent increase. A number of experiments, varying the depth of the milk, would be desirable.——We shall be glad to receive reports of accurate experiments for the *Agriculturist*.

Dwarf Apples.—Several inquirers. The Paradise and Doucain stocks are small distinct varieties of hard sweet apples, propagated from cuttings, layers and shoots. The Paradise is preferred. By cutting down the main stem and banking up about the stool, an abundance of rooted suckers is obtained for separate planting. These are afterwards grafted, or budded with standard varieties, and the growth is stinted or dwarfed. They are also raised from cuttings, the same as quinces.

Shortening-in Peach Trees.—David Engle, Industry. Your trees, pruned Aug. 15, were cut too late in the season. The after growth did not harden off sufficiently to stand the Winter. Better head back from 1st to 15th of July, no later, unless it be left till the season's growth is over, say in October.

Pruning White Pine.—"Querist" may prune his pine trees in June or July. Nip the shoots with thumb and finger if a dense shrubby habit be desired, and cut off the lower branches if a tall naked body be the object.

Barren Strawberries.—Jas. Stephens, Putnam Co., Ind. Hovey's Seedling Strawberry, is a pistillate and will not bear alone. Better cultivate in hills, setting one of Wilson's Albany, Large Early Scarlet, or some other perfect or staminate variety to ten plants of Hovey. A small plot of staminates, growing near the pistillates, answers the same purpose.

Small Private Green Houses.—Several Inquirers. The information asked, will be given when we can have it *well* done.

Worms at the Roots of Pot Plants.—S. A. Snowdon, Clinton Co., O. In potting plants place a little pulverized charcoal in the bottom to keep worms from entering. When already there, apply lime water freely, or drown them by immersing the pot in a tank of water.

The Army Worm, is committing ravages in the Western States, as we learn from numerous private letters. J. H. Abbott of Christian Co., Ill., says they are destroying the corn and wheat fields, and asks what will check their depredations. It is recommended to plow or dig a trench around the fields which are threatened by their invasion. The insects usually come in *armies* from one direction; one account says they are traveling from east to west. Before they reach a field or farm, plow around it, turning the furrow *from* the field, leaving a smooth clean cut which the worms can not easily ascend. Two furrows are still better, throwing the second one out with a spade, or following with a subsoiler. Then throw out the loose soil, and leave a smooth perpendicular cut one foot in hight, next the field. Great numbers of the invaders might be destroyed after they have entered the furrow, by covering them with straw and burning it, repeating the operation as often as a sufficient number are collected.

Borer on the Plum Tree.—J. W. R., Philadelphia, Pa., sends to the office of the *American Agriculturist*, a specimen of a worm found at work in the bark of a green gage plum tree. It is evidently a species of borer, resembling the *ægeria exitiosa*, which is very destructive to the peach, and is also found upon the plum. The latter insect, however, so far as we know, confines its attacks to the bark of the root. The only sure remedy for the borer, is to cut it out from its hiding place, which can be found by examining for punctures in the tree, and following the track with a wire or knife. The parent insects may be entrapped in large numbers by hanging bottles partly filled with sweetened water in the tree.

Absconding Bees.—The Bee Journal says that the only reliable means of preventing the absconding of a swarm, besides the forming of artificial colonies, is to drum out the first and second swarms at the proper period. To prevent a natural swarm from decamping after being hived, place it in a cool room or a dry cellar for twenty four hours, supplying it plentifully with honey. The bees will commence building comb, and will remain contented when afterward brought out and placed on the stand.

Wax or Cement for Bottles.—J. Truman, Hampden Co., Mass., 2 pounds of rosin melted with about 2½ ounces of tallow or lard, makes a cement which will not crack, and is equally as good as "sealing wax."

Hen Manure for Insects.—A Wisconsin subscriber has tried this remedy with success in driving away ants from apple blossoms, and from peonies, and to expel bugs from squashes. For four years he has covered the top of the ground around cucumbers, squashes, and melons, with hen manure, and has had no trouble from bugs. He applies a wash made of hen manure to the bark of fruit trees and shrubs, to guard them against mice, rabbits, and sheep. It also routs the bark louse. One thing is certain, it is a powerful fertilizer, and perfectly safe.

Manure Sheds.—To several subscribers. There is no doubt as to the economy of erecting some cheap covering for the manure heap. It need not be water-tight—a little dripping will be needed, and sometimes an occasional watering, if the heap begins to fire-fang, that is to get dry and mouldy in any part, which should be looked after. The washing of heavy rains carries off most of the best portions of manure. Plenty of straw, or muck, or even of loam, under and over the manure heap, is a great economizer of rich fluids and gases that would otherwise escape and be lost.

Sorghum Syrup.—S. D. Watkins, Grant Co., Wis., manufactured 75 gallons first quality syrup from ¾ acre of cane, and asks what book will give him the most information relative to raising and manufacturing upon a large scale. We think he is already ahead of the books published on the subject. The practical experience of cultivators, detailed in the *Agriculturist*, will be of much value.

Sugar Crop of Vermont.—C. T. Alvord, writing to the Country Gentleman, from Wilmington, Vt., says the maple sugar crop of that State is one of the most profitable crops produced. In 1857 it was more than 8,300 tuns. It is estimated that 200,000 pounds were made, the past Spring, in a single town; this, at 9 cents per lb., amounted to $18,000.

Manure for the Hauling.—D. Edson Smith, Johnson Co., Iowa, writes that in their cities and villages, manure can be had for the hauling, with help to load it thrown in. How our farmers about New-York would make money out of that! In our own neighborhood we pay 60 cents per small one-horse cart load—and small loads they are—yet find it better than to do without good stable manure. Western farmers should improve the present opportunity to *keep* their laud in good condition—a little expense now will tell hereafter.

What is a Sound Horse?—Oliphant defines soundness thus: "We may call a horse sound, when he is free from hereditary disease, and is in the present possession of his constitutional health, and has as much bodily perfection as is consistent with his natural formation." This is not so very definite. It is perhaps enough to say that a sound horse is one which has no marked hereditary disease, and no present disease or defect, to impair his present usefulness for the kind of labor he is intended for.

Raising Late Calves.—"Inexperience." Calves may be raised successfully at any time of the year, *provided* sufficient pains be taken to feed them properly. It is advisable, however, to have cows come in early in the season, say in April, as the calves get a better start before Winter, and are more easily kept on dry feed.

Fatal Disease in Calves.—A. Gardner, Wyoming Co., Pa., writes that he recently lost two calves, one of which died in twelve hours, and the other lingered three or four days, and was killed to relieve it. The symptoms of the disease were obstructed breathing, and wheezing, followed by bloating. He desires to know the nature of the disease and the remedy if there be one.

Sucking Heifers.—A subscriber asks for a remedy. The slitting of the tongue we do not approve. There is nothing better than a stiff leather muzzle, with small tacks driven through to prick the cow when the calf offers to suck. She will not stand the pressure a moment.

Making Breeding Sows Docile.—Y. T. H. writes that by rubbing or scratching the back of a wild young sow while she was fed daily, she was made as gentle as could be desired.

Gapes in Chickens.—A subscriber recommends one feed of soft soap with Indian meal, as a cure. We can not speak of its efficacy from actual trial.

Remedy for Cholera in Hens.—"S. A. C.," Binghamton, N. Y., writes in answer to a query in the June *Agriculturist*, that he had hens affected with a disease resembling cholera, which were cured by administering pounded chickweed (*Stellaria media*) and pulverized charcoal, mixed with sweet milk.—How much, and in what proportions?

Prairie Fowls on Long Island.—Grouse were formerly plenty upon the plains of Long Island, but the sportsman's gun long since swept them away. Efforts are now being made to introduce them from Illinois, and a supply has already been received. We hope that the attempt will be successful. The game laws, which are ample for their protection, should be resolutely enforced.

Partridges and Prairie Hens have been sent to England for naturalization. They arrived at their destination in good condition.

Worms under a Plank.—J. S. Perry, Wayne Co., Mo., writes, that cut worms can easily be captured by laying boards along rows infested by them, under which they will collect in great numbers. He says he discovered this accidentally while removing a board from his garden, where he has killed hundreds of worms by turning the board every few hours. Query: were they cut worms? Common earth worms collect in this manner, but does the cut worm? We think not.

Ants Injuring Pœonies.—Mary Burger, Coshocton Co., O. Your white pœony is doubtless kept from blooming by the ants. They injure the *roots* by burrowing among them. Strew a little lime over the foliage of the plants and upon the soil. A few applications will drive them away.

Camphor Gum for Bugs in Peas.—A correspondent writes that he puts camphor into the cask where he keeps his peas through the Winter. He observes that dead bugs are always found in the bottom of the cask, and very few bugs appear in his peas the following season. He puts these facts together, and has faith in the remedy. It is well known to many housekeepers, that camphor is very offensive to moths and other insects.

Currant Bush Borer.—"Boy Reader," Buffalo, N. Y., will find his currant bushes have been preyed upon by the *Ægeria tipuliformis*, of the same family as the apple tree borer. The blue-black moth lays its eggs near a bud during the latter part of June. The eggs soon hatch and the insects bore into the pith nearly severing the shoot. We know of no good remedy. Destroying the moths, either by bon-fires for them to fly into at night, or entrapping in bottles of sweetened water, will diminish their ravages.

Apple Tree Insects.—M. J. Eagan, Milwaukee, Co., Wis. Specimens of wood with eggs enclosed have been examined. We can not make them out, but judge, they were deposited by a species of Cicada less in size than *Cicaca septendecim*. Shall be glad to learn more about them—when the first punctures are made, and if possible by what insect.

Blighted Apple Leaves.—"Inexperience," Davenport, Iowa. The leaves forwarded are received, somewhat dry and broken; they show no signs of insects that we can discover in their present condition. The probability is, that too much water at the roots, or soluble iron salts in the soil, or other defects in its structure, are the cause. Try loosening it up, adding ashes if heavy or damp, or rotten manure, if the soil be sandy. If water stands in holes dug near the tree, draining is essential.

Bark Lice.—M. J. Eagan, Wisconsin. Strong soap suds, or potash water applied to the trunks and branches with a cloth or brush, is the best remedy. Wash the trees in June or July, when the insects are young and easily washed off.

Scale on Osage Hedges.—S. Smith. Better destroy the scale than cut down your hedge, especially as only 10 feet is affected. See directions given above for removing these insects from fruit trees.

New Seedling Rhubarb.—Mr. Elizur E. Clark, New-Haven Co., Conn., has exhibited at the office of the *American Agriculturist* specimens of a new seedling rhubarb of great promise, which he has named the Washington. It was selected as the best of over 2,000 plants raised by him from seed of the Victoria variety. The stalks exhibited were from 2½ to 3 feet in length, and from 1½ to 2¼ inches broad, weighing, with the leaf attached, from 2½ to 2¾ lbs. each. The color is a fine light green, the leaf less in size than the Victoria, and very soft and tender. The variety is distinctly marked. It is claimed to be two or three days earlier than the Victoria, of a finer acid, and the most tender sort known.

Sugar Beet and Horse Bean.—E. B. Whitman, Douglas Co., Kansas. The white sugar beet is considered the best variety. We do not know where the English horse-bean can be had in this country.

English Brown or Speckled Pea.—S. Hess, Lancaster Co., Pa. The peas enclosed in your letter, are of the above variety. They are largely grown in England as a field pea, but are little cultivated in this country.

Squashes without Seeds.—John Ruddle, Carbon Co., Pa., raised some Honolulu Squashes last season, one of which, weighing 20 lbs., was kept until May 21, and when cut, proved excellent, but had not a single seed in it, or the appearance of a seed—certainly a very uncommon occurrence. The others on the same vines were all filled with seeds.

Dahlias from the Seed.—This is not the best method of getting this flower, and is resorted to only to obtain new varieties. If the seed is sown in a gentle hot-bed in April, the young plants will be ready to set out in two or three months. Only a small number will produce perfect flowers, and they will likely be of a great variety of colors, even though the seed be all from a single plant. The most satisfactory method of multiplying this plant, is by dividing the roots. Each tuber must have a shoot attached, and to secure this, it is better to start them in boxes of earth before planting.

Double Flowering Apple.—Mr. J. F. Cleu, Dutchess Co., N. Y., has shown us apple blossoms with 25 to 30 petals, instead of the 5 ordinarily seen in the apple bloom. On this tree the flowers are always double, and quite showy, and the tree bears fair crops of good fruit. It was imported from Europe. Variety not known.

A Large Pine Apple.—Pine Apples usually weigh 2½ to 4 or 5 lbs., and such have lately been selling at 6 to 15 or 20 cents each. We notice one in the window of Taylor's saloon, marked "*eleven* pounds"—price $4!

Mammoth Poppy.—Mr. H. T. Haviland, Kings Co., L. I., brings us a flower of the Papavor *orientale*, the four petals of which are each about 5 inches broad by 4 inches in length, forming a cup 8 inches in diameter. The color is a bright scarlet, except that each petal has a jet black spot just below the center. The plant is perennial and difficult to propagate, either from seeds or cuttings.

Aloe.—The drawing sent by J. Paxson, Schuylkill Co., Pa., is evidently a variety of the aloe, of which there are nearly 100 species. We are unable to give the specific name of the kind sent. This family of plants requires a moderate temperature, but little more than that of the green-house, watering only once a fortnight, or three weeks.

Green-House on a Hill Side.—J. S. Harris, Houston Co., Minn. A hill-side will answer well, only have at least one side exposed, and a glazed roof. Use stone for the ground walls and wood for the open or outer sides. Better make a hot-bed each season, rather than construct a permanent one.

Grapes for Wisconsin.—J. P. Kepler, Richland Co., Wis., will find the Concord and Delaware hardy and sufficiently early for his climate. They can be had of our nursery advertisers, at say $1 each for Delaware and 50c. for Concord.

Nasturtiums.—A. B. Phillips, writes that Nasturtiums should be planted on the north-east side of a wall, so as to have shelter from the midday sun; and that they will then run from twelve to twenty feet according to the moisture of the season.

Detecting Poisonous Mushrooms.—Mrs. C. H. Vail, states that mushrooms may be tested by stirring them with a silver-spoon; if any poisonous ones are intermixed, the spoon will be tarnished. We can not vouch for the reliability of the test.

The Tobacco Question in France.—The pupils of the Government Military School in France have recently furnished some curious and instructive statistics bearing on tobacco. Dividing the young men of that school into groups, the smokers and the non-smokers. It is shown that the smokers have proved themselves in the various examinations *far inferior* to the others. Not only in the examinations on entering the school, are the smokers in a lower rank, but in the various ordeals they have to pass through in a year, the average rank of the smokers has constantly fallen.

Douglass Pine Flagstaff.—The English Gardeners' Chronicle mentions the raising of a magnificent "staff" at the Kew Gardens, which was 159 feet in length, 19 inches diameter at the but, and 7 inches at top: it weighed near 4½ tuns. The tree was found growing in British Columbia, was 220 feet high, and supposed to be 200 years old.

Water from Sulphur Wells.—Luther S. Davis, Manington (?), writes, that he tried the experiment of procuring water from the upper part of a well with the apparatus described in the *Agriculturist*, Vol. XVIII., page 301, and found it needed the hose to be twice the diameter of the discharge pipe, in order to work well.

A Medical Humbug.—B. R. P., Davenport, Iowa. Rev. Wilson, or any other man, whether Rev. or M. D., who advertises a prescription for the cure of consumption, is a *humbug*. Save your money to buy a horse to ride; this will prolong life more than all the quacks out of States Prison.

Are we to Cease Exporting Wheat?—The Prospective Foreign Demand.

[We copy, below, an editorial article from the leading commercial-agricultural journal of England, which will be read with interest by the farmers of this country. It is important, not as giving a correct view of the condition of wheat-growing in this country, but as indicating the opinions held and inculcated abroad, and also as showing the prospective demand for foreign grown wheat for consumption in England. The *italicized* paragraph, will be specially interesting to our readers at the West, who have still in store a large stock of last year's wheat crop.]

[*From the London Mark Lane Express of May 27.*]

"It has long been our opinion that the grain-exporting power of the United States was likely rather to diminish than to increase under the ordinary circumstances of the country. This opinion was derived from the statistical notices of the census and of the Patent Office, and confirmed by the statements of Jay, Wells, and other American writers on the subject. (See Note **1**). These authorities have warned the agriculturists that if an alteration did not take place in the mode of cultivation, the United States would in a few years require a large importation of wheat instead of being able to export to Europe. The expected result, so contrary to all preconceived ideas of Europeans on the subject, is likely to be precipitated sooner than looked for by the most desponding, owing to the civil war now commenced between the North and the South, that by the abstraction of hands from agriculture will inflict a blow from which it will take many years to recover (**2**). Already, according to Mr. Jay, the proportion of laborers employed in husbandry is not more than 1¾ to every 200 acres; a proportion totally inadequate to the proper cultivation of the soil, and owing to which, large tracts of land are annually becoming unproductive, and going out of tillage and into the wild.

"An American friend, just arrived from the States, has given us a paper drawn up by a statistician of that country, which fully confirms what we have previously thought and written on the subject. And this deduction was made even before the affairs between the North and South had assumed the serious aspect they now present. By the paper written in February last, it is shown that an alarming decrease in the production of wheat had already taken place, and was still in progress; that the Eastern States were rapidly becoming unproductive of wheat; and that the new lands, for want of a mixture of argillaceous soil, will not continue to bear wheat for many years in succession, as is attempted to be done, without being exhausted. After admitting that the crop of last season was very great, but quite exceptional, and that there is a large quantity of wheat in the West ready to be forwarded to the Eastern seaboard for shipment to Europe, the writer goes on to say:

"The tables of the new census being yet incomplete, reference can only be had to the seven previous censuses. The United States exported in 1790, 1,018,339 bushels of wheat; in 1820, 25,821 bushels; in 1830, 408,910 bushels; in 1840, 865,585 bushels; in 1850, 1,026,725 bushels, or only 8,386 bushels more than sixty years before. These extraordinary vibrations in the export are measurably governed by the shortness or abundance of the crop. When short, we have less to spare; when full, we have more. But the fact has long been noticed, that our wheat producing power is rapidly declining. In fifty years, this great staple of Ohio has diminished from an average yield of 30 bushels per acre to less than 15. In eleven counties of that State, which in 1850 yielded 7,531,757 bushels, there were but 4,413,207 produced in 1857, though in the interval many thousands of acres of new land must have been broken up and sowed with Wheat. Virginia, Maryland, and Delaware, have ceased producing largely, while in New-England the diminution is almost incredible. In 1840, Rhode Island produced 3,098 bushels, but ten years later only 49. Within the same period, Connecticut fell from 87,000 bushels to 42,000; Maine from 848,000 to 296,000; Massachusetts from 158,000 to 31,000; New Hampshire from 432,000 to 186,000; Vermont alone maintaining her ground, by yielding 535,950 bushels in 1850, against 495,800 in 1840. In the same period Tennessee fell from 4,369,692 to 1,619,386 bushels(?), Kentucky from 4,803,152 to 2,142,822, Georgia from 1,801,830 to 1,088,534, and Alabama from 638,520 to 294,044. The whole wheat crop of the Union in 1840 was 88,513,270 bushels, while in 1850 it had risen only to 100,585,844 bushels, an increase of only 12,072,544 in ten years; of which increase Illinois, Indiana, and Wisconsin supplied every bushel, showing conclusively that all the old wheat regions were rapidly deteriorating. In the same period only nine of the Slave States increased their crops; while the falling off in the whole fifteen was 2,200,316 bushels (**3**).

"Even in New-York State the falling off is very great. Lands that produced a few years back 25 bushels per acre now barely average 5. In Albany district, lands that formerly yielded from 30 to 40 bushels have sunk to 7½ bushels, and in some counties to 5 and 6 (**4**); so that, notwithstanding the breaking up of large tracts of virgin soil, the diminution of the produce in the old States, and the increasing consumption of the rapidly growing population, more than keep pace with it, and must continue to do so under the scourging and exhaustive system of husbandry now practiced. It appears, too, that even the productive prairie lands are not illimitable. The wheat region, according to the observation of competent persons, is limited to a zone of 10 degrees or 600 miles of latitude, and 20 degrees or 1,200 miles of longitude. Beyond these, wheat can only be grown as Spring corn, yielding a very poor return, and soon becoming exhausted. We learn, in fact, that in the Northern States such has been the failure of Winter wheat of late years, that it is now almost universally the practice to sow Spring wheat; and it is doubted whether Winter wheat has ever produced any profit to the farmer, unless covered with a coating of snow. The States of Ohio, Michigan, New-York, Pennsylvania, Maryland, and Delaware, by the large mixture of clay in their soil, constitute their fitness for growing wheat; while the entire absence of clay in the soils of the Western prairies 'foreshadows their early abandonment as wheat fields.'

"Under such discouraging circumstances, that already appear to have assumed a normal character with the common conditions of husbandry of the United States, what will be the effect of this disastrous war? One, which in its progress, will inevitably drain every industrial institution of its best hands for the army. The probability is that after the present growing crop is got in, a large breadth of the cultivated land will have to be abandoned; and should the war continue for any length of time, the produce of all kinds of "Breadstuffs" must fall off, as fresh supplies of men are needed to be drafted into the armies. (See Note 2.)

"*Our merchants must therefore look out for fresh sources for the supply of wheat likely to be required during the next season* (**5**). *According to all human appearance and judgment, it is next to impossible that the ensuing crop of wheat in this country (England) will near come up to the average. The deficient breadth sown—the wretched state of the seed-bed—the immaturity and consequent weakness of the seed—the ungenial state of the weather throughout the Winter and Spring—all these combine to render it probable that the deficiency will be very considerable, and that we shall want as large, or nearly as large, an importation for next year as in the present* (**6**). Neither is there any telling what effect the war in America will have upon the grain trade in general. Insurance is certain to run high, as must freight also; for no merchant will entrust his grain in an American bottom. On the other hand, the federal States may find it necessary to lay an embargo on the export of grain, should the war continue, as has already been done at Baltimore. It is therefore, we say, desirable to ascertain what resources we can muster to make up the deficiency that may probably arise in the imports from the States. Under existing circumstances these *must* be curtailed, while they *may* be entirely cut off"(**7**).

Notes on the above.

(1).—The various writers from whom the Mark Lane Express has derived its information have not, in all cases, been remarkable for accuracy in their figures and estimates. Some of them at least have been hobby-riders, who have conjured up guess-work statements, based upon what they supposed must have been the result in consequence of the neglect of farmers to follow out *their* theoretical notions of the proper mode of culture.

(2) It is an error to suppose that the present war will draw off laborers enough from the fields to materially lessen the aggregate crop of the principal wheat growing regions. It is true that, in the aggregate, fifty thousand men may temporarily exchange the plow for the musket; but on the other hand, there is still an excess of labor in many parts of the country, which will be drawn to those localities where it is needed. A multitude of others, who have in former years left the field for various manufacturing pursuits, will now, owing to the partial paralysis of of manufacturing, return to farm labor. Again, the vast improvements in labor-saving implements, and their wider diffusion, will greatly facilitate farm operations; and finally, there will be increased effort and skill on the part of cultivators. All these will doubtless, nearly if not quite, make up for any deficiency arising from the war drafts upon the cultivating force of the country at large.

(3) We do not know who this "American friend" is, what his intelligence or reliability, nor what was his object in carrying abroad such discouraging statements. It is to be regretted that the last census returns are not yet completed; but from what we know of the amount and condition of the wheat crop during the last few years, we hazard nothing in saying that the figures for 1860 will entirely reverse the conclusions arrived at in the article above. It is well known that for any one year, the export depends upon the *relative* goodness of the wheat crop here and in other countries. Thus, in 1790 we had an extraordinarily good yield, while in Europe the crop was a bad one, and the Continental war created an unusual demand. So in that year we exported a million bushels. In 1850 we had a poor crop, while there was a good one in Europe, and so we only sent abroad about a million bushels. A comparison of almost any year just before or after, would have given a very different result. By the same process of reasoning we might compare 1850 with the present year. Since January 1st, the export of wheat from N. Y. City alone, has already exceeded *twelve million* bushels of wheat, reckoning the flour in wheat, and the exports of the current year from the several ports of the United States will probably exceed *twenty five* million bushels, or twenty five times as much as in 1850.

(4) Here is a repetition of the nonsense that has been published and re-published, and as often refuted, for several years past. In portions of New-York State, wheat growing was temporarily at a discount, owing to the ravages of insects—not to the deterioration of the soil, as the manufacturers of specific manures have so industriously claimed. There is no well founded reason for the statements that the average product of wheat "has fallen from 25 to 5 bushels," or "from 40 bushels to 5 or 6." Nor is it a fact, as stated in the previous paragraph, that the product of wheat is now declining in the New England States. On the contrary, there has been for several years past an increase in the wheat sown in that section of the country, and in the product realized. The truth is, that during the last ten years there has been a very great waking up among the farmers of the country. Agricultural Societies, farmers' clubs, and agricultural periodicals, have spread with wonderful rapidity during that time. (The circulation of the *American Agriculturist*, alone, is to-day larger than the entire circulation of all the agricultural papers published in the country in 1850, and there are now some 40 periodicals devoted to agricultural improvement, besides the agricultural column introduced into at least 2000 religious and political papers). All these influences have developed to a remarkable degree the agricultural capabilities of this country, and the farmers are to-day ready to contract to deliver just as much wheat as Great Britain and "the rest of mankind" will agree to take.

(5) As intimated above, "our merchants" of England need be in no hurry to "look out for fresh sources for the supply of wheat likely to be required during the next season." Our farmers will be happy to supply them all they require and at moderate prices for *cash* and *needed* manufactures—provided always, that our English cousins, and quondam friends, do not interfere in our national troubles in such a way that

we shall be compelled to shut out their goods, and keep our wheat.

(6) In this paragraph our readers have a confirmation of what we have been urging upon them for months past, viz.: that the prospective foreign demand should stimulate them to cultivate every possible acre this year—raising other crops to take the place of wheat for home consumption, so that we may have an abundance of that crop to send abroad.

(7) At the time the editor of M. L. Express wrote, there was a prospect that the attitude of England toward this country, would sadly interfere with the shipping of wheat, and our Insurance Companies for the time being raised their rates. But the recent intelligence from England shows a better spirit on the part of the Government, and a determination to unite with other nations in driving privateers (or pirates) from the Ocean. Insurance rates have settled back nearly to the old figures; and we have no cause to fear on this score. There is no fear that our government will find it necessary to lay an embargo upon the export of breadstuffs, except where to be sent to enemies. We have enough and to spare, and we repeat, that English and other European buyers of wheat, need have no hesitation in depending upon this country for all they may require.

Transplanting in the Cornfield—

A good way to Increase Crops this Season.

This is an important matter the present year. The Western farmer, having more acres planted than he can possibly get help to properly till, will probably throw this item aside as "book farming nonsense." Let him do so, but to the great mass of farmers, West as well as East, the subject is of more importance than will appear at first thought. Let us illustrate by an example, taking a field—not at the West where land is cheaper than labor, nor in some portions of the East, where thirty dollars or more per acre are profitably expended in manure and culture—but one midway between these two extremes.

Here is a field of ten acres, which at an expense of $100 for preparation, planting, and tillage will average 40 bushels of corn per acre—400 bushels in all—worth *in the shock*, say 35 cents per bushel. It is planted in hills 3½ feet apart, and has, say 3550 hills to the acre, each hill affording room for four good stalks. Taking into account the loss from poor seed, rotting in the ground in a wet season like this, the destruction by birds and insects, and other casualties, it is safe to calculate that by the time the corn is four inches high, not more than three fourths of the hills are supplied with an average of four stalks, while in other hills there is an excess of stalks equal to the deficiency. If under these circumstances the yield can be set down at 40 bushels, it is evident that without any addition to the labor of hoeing, and but little addition to the cutting, the yield would be increased *one third*, if the deficient hills were filled up, giving an increase of 13⅓ bushels, worth in the field about $5, at the low price of 35 cts. per bushel which we have taken as the basis of calculation. (The average price in the Eastern and Middle States is nearer 70 cts. per bushel).

Now for the remedy. With a common trowel (or better, a curved transplanting trowel) a man can readily transfer stalks from the hills having a surplus, to those deficient, at the rate of 45 hills in an hour. By first going over the ground and making a hole with his trowel in the places where a stalk is lacking, and then lifting each surplus stalk with a ball of earth, the corn will hardly feel the change, and ninety nine in every hundred plants will grow well, as we have proved by actual trial. A movement of the foot will suffice to fill up the hole left in a hill and to press down the transferred plant in its new position. At this estimate, two days' work will suffice to fill up the nine hundred hills. Calling the time worth a dollar a day, and the increased yield worth $5 per acre, there is a saving of $3 per acre, or $30 on the field of 10 acres.

This may seem a small matter to a "large farmer," but is of too much importance to be overlooked. If it will pay on a small plot, it will pay just as well on a large one. We have estimated the entire crop worth $14 per acre, and an increase of $3 per acre net profit is equivalent to over *twenty one* per cent. If the yield is greater, as it *ought* to be, or the corn worth more, the cost of transplanting being still the same, the net profit is proportionally greater.

The above is only an example in which a specific number of defective hills is taken as the basis of calculation. It is evident that the estimate will hold good whether the number of defective hills be one half or more, or only one tenth or one twentieth of the whole; or whether the plot to be operated upon contain one acre or fifty. Each hill filled up by transplanting pays a good profit on the cost of the work. The plan recommended, we have tried often enough to speak with confidence, and advise its general adoption. It does not pay to leave a single vacant hill in a field—with perhaps the exception of those rare instances where so little seed has been used at first, that there are no surplus stalks for removal. We invariably practice, and have always recommended, the putting in of plenty of seed, and thinning out the surplus.

Increasing Other Crops.

What is said above of corn, applies with equal, and even stronger force, to many other crops. It is especially the case with beans and pumpkins, in the field, and with nearly all garden products. As an example, we planted some 400 hills of Lima beans the middle of May, and the seed not appearing to be very good, ten beans were planted in a circle around each pole. They nearly all came up, and so about the first of June we transplanted a portion of the surplus plants carrying them with little balls of earth in baskets, to a distant plot. It was done almost as rapidly as the new hills could have been planted with seed, and, as the result, the transplanted hills are as vigorous and as forward as those which were undisturbed. With a little care, and the use of water in the holes, transplanting can be done after plants have attained considerable size.

Pumpkins, squashes, cucumbers, turnips, beets, in short, all kinds of vegetables and flowers, are readily moved at almost any season, if care be taken to preserve a mass of unbroken earth around the roots. We are so much troubled with insects the present year, that we purpose next year to start all our squashes, melons and cucumber vines, etc., in small earthen pots, and keep them in an enclosed space, or together, where they can be guarded until too large to be attacked by insects, and then transfer them to the ground. The pots of small size costing a dollar, more or less, per hundred, may be used several years, and the expense will be abundantly repaid by the safety of the plants, and the earlier starting of the seeds, which may be secured by their use in a warm protected situation. But for the present year we shall this month practice what we advise others to do, viz.: fill up all the vacant spots by *transplanting*.

Draining—Why—Where—How.

(*Continued from pages* 36, 70, 105, 137, 169).

Before leaving stone drains, we must again impress upon the reader the importance of care in *covering* them. If the soil be thrown in loosely, it will surely wash down, and quite likely clog the drain at some point where the flow of water chances to be too slow to carry off the earth flowing in. In laying some 2000 feet of drains last season, which had an open passage at the bottom, and a layer of 12 to 18 inches of small stones above, we *tried* to watch the covering of every foot, taking care to have the surface of the stones leveled off with the smaller stones and pebbles, and a covering of salt hay, straw, or carpenter's shavings evenly laid over the whole, before throwing in the soil. Though the first layer of earth was tramped down, we are satisfied that it was not packed hard enough. The season being remarkably dry, there was not the aid of frequent moisture to make the settling firm. The first rain that fell, came down in torrents, and sinking rapidly into the still loosened soil, it washed in a large amount of the earth, so as to give the water flowing from the outlet a muddy appearance. The result was, that the cesspool (opening down into the sand *strata*) was so filled with this fine deposit of mud, as to be ineffective after a few weeks. It was cleaned out, and all went on well until toward the close of Winter, when another accumulation of clay and fine soil, stopped the cesspool again. Had the first layer of soil over the stones in the drains been thoroughly packed by beating it down at every point, only clear pure water would have filtered into the drains. Where there is a free open outlet from the main drain, the inwashed soil will usually be carried out, and less care is needed; but even then, if the drain have not a sufficient fall to give a rapid flow to the water, there is danger of obstruction at some point by the accumulation of the inwashed soil. We can not, therefore, repeat too strongly the advice to attend well to securing a good covering of straw, leaves, refuse hay, or inverted sods over the stones, and the firm even packing down of the first layer of earth thrown in. A little extra care here will perhaps save the efficiency of an expensive drain. What is worth doing at all is worth doing well.

TILE DRAINS.

This is an important department of our subject, and worthy of a somewhat lengthy and detailed discussion; for, as we have already hinted, tiles will soon become the chief, and, except in rare instances, the *only* material used for constructing drains. When good tiles can be obtained for 12 to 20 cents per rod, the less digging and less trouble in laying required, will make them cheaper than stones, even if the latter were delivered upon the ground free of cost;

Fig. 14.—DRAIN-TILE BRICK.

while the greater effectiveness, and more certain durability of a tile drain, render it vastly superior to the best one that can be made of ordinary field stones.

Drain Tiles are tubes or pipes made of brick clay and burned hard like bricks. A common brick with a hollow through it, or a groove in one of its sides like fig. 14, is a drain *tile*. This form is a very good one, by the way, though

more expensive than the common pipe tile. A continuous series of such bricks laid one upon the other, as shown in fig. 15, will make a perfectly effective drain, and one that will last for centuries, if made of good brick clay, thor-

Fig. 15.—HOLLOW BRICKS LAID.

oughly burned. Where machine-made pipe tiles are not yet accessible, it will often be practicable to have such bricks made at a brick-yard.

Drain tiles proper, are tubes or pipes, made in various forms, and named *round* or *pipe tiles, horse-shoe tiles, sole tiles, etc.* These are now made by machines which press out the ground clay in continuous tubes, upon an endless apron, where they are cut up into the desired lengths, and carried to the drying sheds on long round-tined forks. After drying, they are burned in kilns the same as common bricks. These tiles are produced so rapidly by a good machine, that it costs less to make them than ordinary hand-made brick, though they are more troublesome to dry and burn. Owing to the small number

Fig. 16.—ROUND TILE.

of machines yet in use in this country, the lack of experience, and the comparatively little demand, the price at the yards ranges from $8 to $12, per 1000 for the small sizes, and from that upwards to $15, $20, $30, $40, $50, and more, according to the size, form, etc. (In England, where the demand is vastly greater, and labor cheaper, the price is scarcely more than a fourth as much, and ere long the cost will be greatly reduced in this country.) Tiles are usually plump 12 inches in length after burning. The present price at Albany is about as follows:

Round Tiles.		*Horse-shoe Tiles.*	
1¼ inch diameter	$ 8 ₩ 1000	2⅜ inches high	$10 ₩ 1000
2¼ do. do.	12 ₩ 1000	3⅜ do. do.	15 ₩ 1000
3⅜ do. do.	40 ₩ 1000	4⅜ do. do.	18 ₩ 1000

Sole Tiles.

2 inches rise of bore	$10 ₩ 1000
3 inches rise of bore	16 ₩ 1000
4 inches rise of bore	30 ₩ 1000

The cost of collars for the round tiles is about half the price of the tiles themselves, so that we may reckon the cost of 1000 feet of pipe tiles, 1¼ inches in diameter, including collars, at $12, or 1 and 1-5th cents each—equal to about 20 cts. per rod. For pipes 2¼ inches bore, with collars,

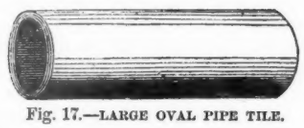


Fig. 17.—LARGE OVAL PIPE TILE.

$18 per 1000, or 30 cents per rod. The cost of other kinds per rod can be readily calculated, allowing sixteen pieces to lay about one rod.

Fig. 16 shows a ROUND PIPE TILE. Fig. 17 is also a PIPE TILE, but made oval. Both of these may be laid down end to end, as shown in fig. 18. A much better method, though more expensive at first, is to provide them with *collars*, which are simply short pieces of larger pipes slipped over the joints. Fig. 19 shows the method of laying pipe tiles with collars.

Fig. 20, is a HORSE-SHOE TILE, so called from its form. These are laid down end to end, on the bottom of the drain, usually upon the hard soil, but sometimes upon thin boards, where the soil is loose. If these are used, a better plan is to lay them on *soles*, that is thin bricks, as shown in fig. 21. The soles add materially to the cost.

Fig. 22 is called a SOLE TILE. It differs from the oval pipe tile in having upon one side a flat bottom, formed by two flanges. These are preferable to the round tiles if the latter are used without the collars, as the sole tiles rest upon a broad base, and are less likely to be displaced. There are various other forms of tiles, such as fig. 23, a convenient form for joining two drains at right angles, etc.; but the pipe tiles, sole tiles, and horse-shoe tiles, are those most commonly used, and to these only need we give attention.

BEST FORM OF DRAIN TILES.

The horse-shoe tile (fig. 20,) has been most generally used in this country, but there are serious objections to it. If sole pieces are used, the cost is too great, and there is danger of their being moved by stones, or by having more soil

Fig. 18.—ROUND TILES LAID.

filled in upon one side than the other. They are also weak at the lower edges, liable to be broken in handling, and to be crushed in when laid, by pressure of earth and stones upon the sides. If set upon the ground, they may settle into it; and, besides, the bottom of the channel being the soil itself, the water is liable to wash out the earth at several points so as to let an occasional tile settle out of place and break up the continuity of the channel at one or more points.

These difficulties are mainly overcome in the sole tiles (fig. 22). These are strong, and lay pretty firmly, and are to be preferred to the horse-shoe form. It was claimed in behalf of the horse-shoe form, that the open bottom, and the

Fig. 19.—ROUND TILES WITH COLLARS.

seams along the edges when the detached soles were used, presented a better entrance for the water. But experience has proved that the openings between the *ends* of the sole or pipe tiles are amply sufficient to admit all the water that the pipes can carry away. To prove this, set two of them upright, one upon the other, as closely as possible; stop up the bottom of the lower one, and pour water rapidly into the top of the upper one. It will flow out through the small aperture between the two pieces fast enough to give a rapid downward current through the upper tile. If the ends of sole tiles, or pipe tiles be placed so closely together that the average width of the crack between them be only one-twentieth of an inch, the sum of the openings in a drain of 2 inch tiles, 100 feet long, would yet be nearly *twenty times* as great as the bore of the drain; or in other words, the simple openings between the tiles would, in 100 feet of drain, admit at least twenty times as much water as could flow through the 2 inch bore of the tiles. And this amount of water is very large. It has been found by experiment that in a drain

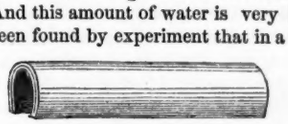


Fig. 20.—HORSE-SHOE TILE.

of 2-inch pipes, having a fall of one foot in twenty, the discharge of water through it is equal to more than 2000 gallons an hour. With a fall of only 2 feet in 100 feet, the discharge of water is still nearly 1000 gallons an hour, where the soil is so saturated as to keep up a full flow.

After considerable observation, and study of the subject, with some experience in laying the sole tiles, we have come to the conclusion that the round pipe tiles, *with collars*, are on the whole the *best* form. There is so much trouble in securing a firm uniform bed, and placing the sole and horse-shoe tiles evenly together, that we

Fig. 21.—HORSE-SHOE TILES AND SOLES.

doubt whether there is often a continuous open passage through the whole length of over 1 inch in diameter, after a 2-inch tile drain is laid and thoroughly settled. The chances are, that after a time the aperture will not be so large as this. If by stones, or more earth, on one side than the other, or the settling of one end more than the other, a single tile is thrown out of place half an inch, one half of the passage is closed. When the pipes are laid with collars, a perfect, *permanent* passage is preserved through the whole length. A little fine soil thrown around the middle portion of each piece, between the collars, will amply support it from breaking by the pressure of the superincumbent earth. The collars over the joints save the necessity of using straw or other litter under the earth filled in. The water will find ample space for entering

Fig. 22.—SOLE TILE.

through the spaces between the collars and pipes.

There is, then, little doubt that pipe tiles 1¼ inches in diameter *with* collars, will afford as good an opening, as 2 inch sole, or horse shoe tiles, and one more sure to remain permanent, while the former can be laid more rapidly, with less care in securing a smooth bottom to the ditch. The cost of the pipes and collars is about the same as the larger sole-tiles.

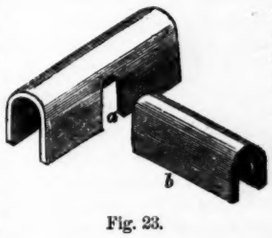


Fig. 23.

The cost of 1¼ inch pipes with collars is given at $12 per 1000, and that of 2 inch sole tiles at $10 per 1000. This difference would be more than made up in favor of the pipes, if to be transported far, as 1000 pipes of 1¼ inches, together with the collars, weigh less than 1000 sole tiles of 2-inch rise in the bore.

Fallow for Fall Crops.

The different kinds of fallowing explained—Advantage of buckwheat—to be sown on fallow land this month.

Fallow is a term so little used in American husbandry, that multitudes have no distinct conception of the operation. The prevailing practice in this country, especially in the newer States, is to work land as long as it will yield remunerative crops, and then give it over to pasture, or to grow up again to brush and wood. Plowing land to benefit next year's yield, and turning in green crops, seems a waste of the raw material not to be tolerated. In British husbandry, fallowing is well understood, and very generally resorted to. The original meaning of fallow is, *to fail*, and it is applied to land that from accident, or design, fails of a crop.

Fallows have different names given to them,

according to the treatment to which they are subjected, and the time they are suffered to lie idle. Thus, a *naked-fallow* is a field plowed, harrowed, or scarified, without any seed. The object is to benefit the soil mechanically, and to subject it more completely to atmospheric influences, and thus to prepare it for future crops.

A *green fallow* is that in which the land is made of fine tilth and cleared of weeds, by cultivating peas, tares, potatoes, or some other root crop, to prepare it for grain. In this way, the land does not lie idle at all. The fallow is only a part of the rotation, in which the land rests from grass or grain. Fallows are also named from the season in which the work is principally done upon them. Thus: a *summer fallow* indicates that the land is plowed several times during this season, and a *winter fallow*, that the plowing is done just before the winter sets in, so that the soil may receive the benefit of the freezing and thawing.

The objects arrived at in this process are three-fold. First, the land has rest from a green crop. Every one has noticed the inability of land to produce the same crop for a long series of years, unless it have annual fertilizing, either from natural or artificial sources. Alluvial lands, subjected to annual overflow, bear grass or corn perpetually without diminished crops. Some of the root crops, with large dressings of manure, do well upon the same land, year after year. But these are exceptions to the general rule. Every cultivator expects to see diminished crops, unless he change them from one field to another. The fallow gives this desirable change, whether it be *naked*, or *green*.

Another object, supposed to be gained by the fallow, is the enrichment of the land. The process of nourishing plants is stopped for one season, while the preparation of plant food goes on by the decay of vegetable matter already in the soil, and by chemical changes in its mineral constituents. The rains and snows also bring their aid to the soil. If the fallow be improved by turning in a green crop, or if the land be foul, and the weeds and grasses are plowed under repeatedly, large accessions are made to the riches of the soil. The land is improved, both in its mechanical texture, and in its stores of food immediately available for future crops.

A third aim of the fallow is to clear the land of foul weeds, and grasses. As often as a crop of weeds springs up, say every three weeks, the land is either plowed or harrowed, and the weeds are destroyed. Every change in the surface soil causes new seeds to vegetate, and thus the land is gradually cleansed.

The best method of fallowing land to prepare it for winter rye or wheat, will depend upon the condition of the soil, and the circumstances of the cultivator. No rule can be given that will apply in all cases. Most farmers, when they fallow at all for the winter grains, turn over the sward early in Summer, and cross-plow and harrow when they sow the grain. If this be done, the first plowing should be deep, and the Fall plowing so shallow that it will not disturb the sod.

A better method for all soils not in good heart, is to turn in some green crop, and only harrow afterward, to keep the weeds down until the time of sowing the seed. If there is a good crop of clover upon the land, this is one of the best plants to plow under as a preparation for wheat. If the soil be not sufficiently rich to bear clover, buckwheat may be sown. This is then the best fallow crop, because it grows so rapidly, and gives such a large burden of stalks and leaves for manure. If the sward be turned over early this month, and sown with buckwheat, it will nearly attain its full growth by the last of August, or first of September, when it should be plowed in. This plant makes the ground very mellow, and is an excellent preparation for winter grain. It will also cleanse the land of weeds if it need it, and save the labor of plowing and harrowing for that purpose.

Tim Bunker on Breastworks.

MR. EDITOR.—There never was such a stir in Hookertown before, since the days of the Revolution, and I doubt if the fathers were any more lively than our folks are. I never shall forget the Sunday when the news came that Fort Sumter was on fire. I shouldn't felt worse if Connecticut river had sunk, or Hookertown been destroyed by an earthquake. And since that Sunday we havn't talked about much else but the war. The next Sunday, Mr. Spooner preached a sermon from the text "He that hath no sword, let him sell his garment and buy one," that made every man's heart go like a trip-hammer. The next day, we had a liberty pole raised a hundred feet high, and a flag hung out, that went through the last war, with several shot holes through it. We have raised a company of eighty men, and money enough to support them for a year. Almost every family that had any grown-up boys, has sent one or more to the war. The middle aged men and old ones have formed themselves into a Home Guard, and if the boys don't put things through in good shape, we are going ourselves to straighten them out.

John came home from meeting after Mr. Spooner's sermon, and says he:

"Mother I am going to enlist."

Mrs. Bunker raised her spectacles from Scott's Bible which she happened to be reading just then, and said she:

"I can't make any objections, John. Your grandfather fought at Bunker Hill, and Mr. Spooner says this is a continuation of the same war, a war for the life of the nation. I hope you will show that the Bunker family has not degenerated."

John being our only boy, brings the thing pretty close home to us, but now that the ministers and women are raised, there can't be any backing down. There is no trouble about getting troops, and money enough to support them. They all want to go. You see, a man might as well emigrate at once, as to have the women agin him.

But I have been thinking that we are in danger of leaving an enemy in the rear, that we have not been calculating upon. I have always noticed that excited people are not the best judges of expediency. Many a brave general has been conquered by an enemy in the rear. In going to war, you see, quite as much depends upon having the inner man fortified, as upon having breastworks between us and the enemy. You see, a soldier is a sort of engine, that won't go without fire, any more than a locomotive. And you have to supply the fire, wood, and water, three times a day pretty regular, or your army of soldiers is no better than a flock of sheep. Men can't fight on an empty stomach. You see, this fighting is a good deal like mowing, or rather like pitching on a load of hay, when a thunder shower is coming up, and you have only twenty minutes to get the load on, and to get it into the barn. There is nothing like a well fed stomach to do sharp work on; even a good conscience and a good cause don't amount to much without it.

Now you see, the enemy we are like to leave in the rear, is short crops. There may be no danger of famine in this country, where land is so cheap, and where so large a part of the people are farmers. But there is danger of short crops, and a very high price for all kinds of provisions and breadstuffs, which occasions a great deal of suffering among the poor in the cities and villages, and throws every thing into confusion. And it seems to me, that this is the enemy that farmers are particularly called upon to guard against.

We have got material enough for soldiers in our cities and villages, merchants and mechanics who are thrown out of employment, or whose profits are very much reduced by the disordered state of business. While they are rearing the breastworks outside, we must take care of the breastworks within, and see that they are well fortified with beef, pork, mutton, bread, potatoes, etc. There isn't quite so much glory attached to this kind of fortification, as there is to gunpowder and musketry, but there is quite as much virtue in it. You see, powder and ball are not worth much after the pork and beef fail. Many more forts have had to surrender for want of provisions, than for want of powder.

Now, the women and young folks don't see this so clearly as men who have smelt the smoke of battle. They go in for the fuss and feathers, and worship the epaulets and military caps, and think these are going to save the country. The real battle field will be in the rear of the armies, away down in the Gulf States, and north of the Ohio and the Potomac, and the steel that will do most execution is that which furrows the bosom of the peaceful earth, rather than human bosoms. In modern times the plowshare is the most potent of all military weapons, for it supplies gold to the military chest, powder to cannon, and rears those inward fortifications without which, earth works, fosses, and granite walls are useless. Every wheat field with its plumed heads is a regiment of soldiers, and every stalk of corn, with its golden ears upon the fields of peace, is a sentinel doing duty for the country.

This is about the pith of public sentiment up here among the old folks, and I send it down for what it is worth. It struck me that there was something in it worth considering, when every man is anxious to get off to the war. It will never do to have an enemy in the rear. You see I go in for breastworks and fortifications, especially for the inner man.

Yours to command,

TIMOTHY BUNKER, ESQ.

Hookertown, June, 1861.

New Varieties of Wheat in Pennsylvania.

In a recent letter to the *American Agriculturist*, Dr. J. Henderson, of Mifflin Co., Pa., states that the white varieties of wheat have of late years been so injured by insects, that a hardy productive red wheat is a great desideratum. The "Mediterranean" varieties have been the chief reliance for a few years past, but they have degenerated so much as to produce only half a crop in most places. He has tried wheat from England, France, Italy, Turkey, and Algiers, but has found them all either too tender for the severe winters, or too late to escape the insects or rust. Of two Patent Office parcels of beautiful wheat from Sweden, not one kernel germinated. The Soule's white wheat, obtained from

Rochester, N. Y., several years ago, is still cultivated, and generally with good results when grown upon the southern slopes of mountains.

For the American Agriculturist.

Buckwheat.

Buckwheat for Food—For Manure—Two Crops in one Season—A Crop of Hay and one of Buckwheat on the same ground every year.

This plant, (*Polygonum fagopyrum* of botanists,) though nowhere relied upon as a leading crop, is extensively cultivated in this country. Its period of ripening, about seventy-five days, is so much shorter than that of the cereals, that it is often available where these fail. If the corn rots, or is destroyed by birds, buckwheat can be sown when it is too late to replant the corn. It is also frequently sown after the winter rye and wheat come off, when, from any emergency, the farmer wishes to take two crops from his land in a season. It is particularly well adapted to a year like the present, when we want to produce all the breadstuffs possible with our manure and labor. Though not a cereal, botanically, it is an excellent substitute for grain, and is quite easily raised. It is perhaps a failing of the plant, that it has such a reputation. For it is usually turned off upon the poorest land, grown without manure; and results, not infrequently, in making both the land and the owner poorer.

The time of sowing is from the middle of June to the middle of July, according to the climate and the circumstances of the farmer. If sown too early, it is found that it does not head as well. If too late, it is liable to be cut off by the frost before the grain is fully matured. Where killing frosts usually make their appearance the last of September, the seed should be sown from the first to the tenth of July. In milder climates, it may be deferred a few days. The yield will depend quite as much upon the condition of the soil, as upon the climate. Some sow habitually upon light sandy land, without manure, and are content with eight to ten bushels; while others take a better class of lands, and get from thirty to fifty bushels to the acre.

The crop delights in warm sandy loams, easily wrought, but will grow readily where any of the cereals will. It shows the effects of manure as readily as any plant. Peruvian guano seems to be a specific for it. We have seen astonishing results upon very poor, worn out land, with a dressing of this fertilizer. And if one has to purchase manure for this crop, there is probably nothing that will give so good immediate returns. A bag of 150 pounds per acre is a common dressing; but if the land has been very hard used, twice that quantity will be better economy.

In some of our farming districts, it is quite common to use buckwheat for turning in as a green crop. We have seen very fine crops of rye raised *annually*, for a succession of years, by simply plowing in the stubble as soon as the rye was off, and sowing buckwheat to be plowed in for manure when in full blossom. The gentleman who pursued this method, claimed that there was increased productiveness every year. Buckwheat does not return so large a mass of vegetable matter to the soil, as clover, but it grows much more rapidly, and can be used where clover can not. If necessary, two crops of it can be turned under, in a season.

Buckwheat is also an excellent cleansing crop. Many farms have received such slovenly tillage, that they are heavily stocked with weeds, charlock, thistles, daisies, and many other troublesome plants. The expense of cultivation is in many cases doubled by these weeds, and it becomes a matter of great importance to get rid of them. The late plowing for buckwheat in mid-summer, turns under a crop of weeds before they have time to mature their seeds, and thus one generation is disposed of. A few crops of buckwheat in succession will clean the land.

But the main thought of the present year will be to increase the store of food for man and beast. Buckwheat is largely used for both purposes, in the Eastern and Middle States. Some farmers, who do not have it upon their tables, use it ground up with oats and corn, as provender for their horses and swine. In popular esteem, it stands between oats and corn, in its value for making muscle and fat.

In sowing buckwheat, it is a common error to seed too heavily. This plant must have room in order to make good heavy grain. Sow from one-half bushel to a bushel to the acre, according to the quality of the land. The richer the land, the less seed. CONNECTICUT.

For the American Agriculturist.

Does it Pay to Exchange Seed?

MR. EDITOR.—Almost everybody, and everybody's echo, that is, the newspapers, advise farmers to change their seed often—to get that which has been raised at a distance, even if it be of the same variety, and grown on no better land. If we can always be sure of getting seed which has been raised under more favorable circumstances, and brought to better maturity, I can understand how a change will be beneficial; but I don't exactly see how a mere difference of locality will improve seed. It may be that corn or wheat which has grown in a northern climate will have a tendency to ripen earlier than the same variety produced in a southern region, and there may be an advantage in sending North for wheat on this account; but some contend that it will do great good to get new seed even in the same latitude, only so that it be not grown in the same neighborhood.

One man says that sowing seed from the same farm every year, is like breeding in-and-in, and the race must run out. But that can't be true, for seed don't breed like cattle. When wheat is taken from Massachusetts to Ohio, it is not crossed upon Ohio wheat, but it gives its own increase. Suppose two farmers, one in New-York, the other in Illinois, should exchange seed wheat, would both gain in the excellence of the product? According to my ideas, other things being equal, he would get the best of the bargain, who received the best seed.

I knew of a man who raised his own seed wheat for more than twenty years, and his crops improved during the whole time. Occasionally he sowed a field with wheat brought from a distance, by way of experiment, but it never proved so good as that raised from his own stock. The secret of his success was the pains he took every year to select the best part of his field for seed. This was always done before harvest; the plot was staked off and left to ripen fully, then it was threshed with a flail as soon as drawn in, and carefully stored by itself. If some careless man, who had taken his seed haphazard from what happened to be left in the bin at sowing time, should exchange with one who had taken such pains to select seed year after year, no doubt he would insist that change was of great benefit to him, and it would be: but it would be better for him, and for every other farmer to improve his own seed, rather than run the risk of finding somebody to do it for him.

JONATHAN.

Sorghum Notes.

O. N. Brainard, of Linn Co., Iowa, who has had much experience in the culture of sorghum, and manufacturing it into both syrup and sugar, sends a lengthy and interesting account to the Prairie Farmer, from which we make extracts.

Mr. B. would save seed from a patch grown for the special purpose, distant from corn or any other plant of the same nature, with which sorghum can possibly mix. Select the ripest heads, tie in small bundles, and hang them up during the Winter. Clean out the richest seed and tie in bags one week before planting. Put these bags in warm water, over night, and bury in earth the next day, until sprouted. Plant on rich, sandy ground, plowing deep and harrowing well. Put in rows 3½ feet apart and quite thickly in the drill, cover the seed with a harrow, and roll at night what has been planted during the day.

As soon as the young shoots can be seen, knock out the front tooth of a horse harrow, and go over the piece, the team walking astride the rows. When the cane is 6 inches high, cut out the surplus shoots with a hoe, leaving 3 or 4 to the foot. After this, working twice with the cultivator or plow will be sufficient.

In cutting up, strike so as to leave a pointed butt for the crusher to take hold of. The crop should be cut the latter part of September, before heavy frosts. If well shocked, with the leaves on, it keeps sweet until Winter. In trimming for the crusher, cut off the two top joints, and throw away; the juice from that portion is bitter. For *sugar*, cut the canes in the middle, and use only the lower half. The other will answer for syrup.

A good crusher and boiler are absolutely indispensable. Mr. B. used a substantial, upright 3 roller iron mill, manufactured at a cost of $85. The large roller was 18 inches in diameter, and 1 foot long. The two smaller ones, 9 inches in diameter, with cog wheels upon the upper ends. With two horses he extracted 120 gallons juice per hour. Cook's Patent rocker evaporator, 6 feet wide and 18 feet long, was used to reduce the syrup. When the mill is started in the morning, fire is lighted under the evaporator, which is set on a level. After boiling, say 20 to 30 minutes, it is lowered, and a steady stream of syrup runs from the lower end. No juice is left over night, and every thing is kept clean. The cane is fed, butts first. Keep the evaporator at such an inclination that the syrup shall take about 30 minutes to make the passage. The juice is poured in the upper end through a tub filled with straw, to strain out bits of cane, and the scum is removed during the boiling.

For sugar, boil until the syrup will draw out like hair between the thumb and finger, and set it away in a warm place to grain. When grained, put it into a vessel with small holes in the bottom, to drain off the molasses.

Mr. B. kept a memorandum of the different soils on which cane was grown, amount per acre, value of crop, etc., from which we condense the following:

"Began to crush, Sept. 6. Set the evaporator level, let on the juice, started a brisk fire, and in 22 minutes lowered the evaporator and pulled the plug. The syrup commenced to run off

thick and clear. It was passed through a large milk strainer into open kegs, so as to cool before barreling. Product from 60 rods of clay ground, planted in hills, 113 gallons syrup with cane taste—large growth and seed half ripe.

Sept. 13—made 61 gallons first quality syrup from 30 rods of high hazel ground. This would have been the prize piece, had not a tornado destroyed about half the cane before gathering it.

Sept. 14, 15, 16—made 250 gallons syrup from 1½ acres. Soil, a mixture of sand and clay; cane in hills 3½ feet each way, 4 stalks in hill, well tended and suckered. A portion of the syrup sugared in 6 days, although the cane was not cut in two for that purpose.

Sept. 20—made 80 gallons nice honey syrup from 40 rods of cane drilled in. Hazel ground, poorly tended and injured by the tornado; was crushed with leaves on. Oct. 1 to 8, made 650 gallons good honey syrup from 3 and 2-5th acres, black sandy soil, with some oak trees standing.—Oct. 26, made 41 gallons best syrup of season, from cane cut in Sept., and covered with straw; also 56 gallons from the same piece of cane cut after freezing. The molasses was sour and poor.

Nov. 22—made 88 gallons very thick, light colored, and excellent syrup from 51 rods cane cut in Sept., set in large shocks, like corn, with leaves on; in which state it was crushed. The soil on which it grew was a sandy prairie.

Nov. 23—made 38 gallons poor syrup from cane grown on low, rich, prairie soil. Boiled 18 gallons juice into one of syrup. The Chinese cane should never be raised on such soil.

Mr. B. says about 2,000 barrels syrup were produced in his county the past season, worth $40,000 at $20 per barrel, and that it pays well at that price to cultivate sorghum. The whole apparatus for manufacturing 200 gallons syrup per day, should cost about $175.

Price of Potatoes in New-York City for Seven Years Past.

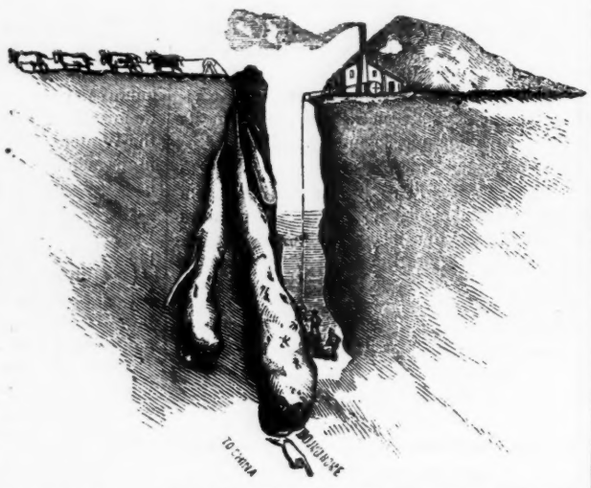
The following table, carefully prepared for the *American Agriculturist* by Mr. Henry B. Walker, a large dealer of this City, will be found interesting and useful. The statistics have reference to the best potatoes at wholesale prices; it will be noticed, that the price has fallen every year, with but one exception, since 1854. This is owing in part to greater facilities for transportation, which have made more distant localities accessible to this market, and thus largely increased the supply. But it is without doubt largely due also to improved culture, by means of which greater quantities have been raised in the vicinity of New-York.

AVERAGE PRICE PER BUSHEL.

	1854.	'55.	'56.	'57.	'58.	'59.	'60.
Jan...	$1 07	$1 22½	$0 72	$0 97½	$0 93	$0 52½	†0 45
Feb...	1 18	1 25	0 72	1 03½	1 00	0 57½	0 58
Mar...	1 12	1 25	0 80	1 00	*1 08½	0 54	0 50
April..	*1 50	*1 43	0 62½	1 35	0 88	0 55	0 52½
May..	1 44	1 26	†0 60	*1 41	0 77½	*0 82½	0 55
June .	1 50	1 33½	0 60	1 25	0 58	0 68	0 60
July ..	1 09	1 00	*1 00	0 72	0 55	0 70	0 59
Aug...	1 50	†0 62½	0 60	†0 65½	0 61	0 47	0 52½
Sept...	1 22	0 69	0 69½	0 83	0 57	0 50	0 63
Oct....	1 06	0 69	0 75	0 83	0 55	0 66	0 45
Nov ..	†0 80	0 69	0 84	0 95½	†0 52½	0 60	*0 63½
Dec...	1 02	0 65	0 94	0 95	0 55	†0 45	0 62½
Av'ge	$1 22	$1 01	$0 75	$1 00	$0 72	$0 59	$0 56

* Highest price; † Lowest price during the year.

WHAT OF THE CHUFA?—A few years since the Chufa, or "earth almond," (*Cyperus esculentus,*) attracted considerable attention. The nuts, or tubers, were prized by some as a substitute for chestnuts, and others claimed that they would be very valuable as feed for swine. The ground was to be stocked with the tubers, which multiply rapidly, and the hogs were to do their own harvesting. Recently little has been heard of them. Is any one growing the crop? If so, we should like to hear results.



The Dioscorea Batatas Homeward Bound.

The long time readers of the *American Agriculturist,* may remember the above humorous illustration of the habits of the Dioscorea Batatas or Chinese potato, published in Vol. XV, (and now republished in response to numerous requests.) It represents a cluster of the plants which have started for home, China, by the shortest route, downward through the soil. The idea was suggested by our own experience in trying to dig those we had planted, and by the account given by a subscriber, who expended $10 for a dozen "bulbs" (bits of skin), and after vainly waiting a long time for their appearance above ground, wrote to us to inquire, if "they had not started for home." This gentleman has just informed us that in digging a deep drain in the ground where he formerly put the plants, at the distance of *five feet* below the surface the workmen came upon a singular looking object, of vegetable origin, flattened out six or eight inches in extent, and about an inch thick. Upon examination it proved to be the long lost Dioscorea, which had been industriously growing downward since 1856! It had met with a large stone, and flattened out in trying to grow around it. He had not noticed the leaves above.

Destroying Ground Squirrels.

In some part of the West, and especially in California, the ground squirrel, or "prairie dog" is very troublesome to the corn and wheat fields. Phosphorus is generally used to poison this pest, but as sometimes prepared, it ignites from the heat, or by the friction when bitten, and the ground being dry, large tracts are often burned over. A late number of the California Farmer, gives the following plan for preparing it, which is safe, and successful in its effects:

Dissolve a stick of phosphorus two inches long, in a gallon of warm water, then stir in flour, or shorts, to the thickness of a batter, and add wheat until the mixture is quite stiff, stirring it to coat the wheat. Scatter small quantities of it about their "towns" or holes. It will not fire, but will kill. The squirrels eat it better if a little sugar be added. The writer cautions those using the mixture against allowing hogs to get at the mixture, or the dead squirrels.

The Rye Fly (*Cecidomyia Secale?*).

In August of last year Mr. Daniel Steck, Lycoming Co., Pa., sent to the office of the *American Agriculturist* several stalks of rye, showing the work of an insect whose ravages we had not previously seen noticed. Fleshy excrescences appeared on the body of the stalks immediately above the joints, in which were encased the larvæ of a minute insect. The excrescences appeared to be formed by an abnormal growth of the stalk, in the same manner as galls are formed on leaves and twigs of trees and plants, in consequence of injury to the vegetable cells. Mr. Steck has continued to observe the insect, and recently forwarded additional specimens, with the following notes on their habits, which we copy as written.

"The full grown rye fly makes its appearance about the first of May. It somewhat resembles the Hessian Fly (*Cecidomyia destructor*) in size and general form. This fly deposits its eggs, which are of a yellowish color, the latter part of May, in the upper channels of the rye leaf. It soon hatches, producing a very small worm, which works its way down between the leaf-sheath and stalk until it arrives in the vicinity of the joint, where its presence, from some cause, produces a protuberant excrescence, in which the larva becomes enveloped. This interferes with the development of the grain, and also weakens the stalk, often causing it to crinkle and fall to the ground about the time of blossoming.

The larva attains its full size about the time the circulation of the juices in the stalk ceases. It remains in this state until the following Spring, without further change; but as soon as warm weather commences 'a change comes over the spirit of its dreams,'—if it has any—and with its mandibles it gnaws or bores through its strawy prison, and issues forth a perfect insect without moulting, which is not the case with most insects passing from the pupa to the perfect state."

The specimens received, consisted of joints of the straw grown last year, on which the protuberances were fully developed; from six to ten, and in some instances fifteen of them being clustered in the space of two inches above the joint. Mr. S. wrote that these contained the larvæ, which had been retarded from changing to the perfect insect by being kept in a cool place. But upon opening the prison house of one of the insects, out he came, full winged, active, and perfect in every respect. Several have since emerged unaided, by opening an orifice through the straw. The change from larva to pupa, and to imago or perfect insect, therefore takes place within the cell which has grown for his accommodation. The fly is smaller than a mosquito, black, and in form bears some resemblance to the Hessian Fly (*Cecidomyia destructor*), as stated above. An engraving of the latter insect appeared in the *Agriculturist,* Vol. XVIII, p. 240, (Aug. No.) Mr. Steck has named it *Cecidomyia Secale,* or Rye Cecidomyia. It may be recognized by Entomologists as a species already described, though we are unable to find it particularly noted in any work to which we have access.

If the insect should spread as rapidly as the

midge and others of like species have done, immense injury will result to the rye crop, which has heretofore escaped in a great measure from harm by insects. We know at present of but one treatment that promises to stop its ravages, which is, to burn all the straw, including the stubble of infested fields, and thus destroy the insect in its Winter quarters.

The Rot in Sheep.

A western subscriber asks for information about this disease, which he thinks has affected some of his flock, though the symptoms described, may result from some other disease. We are not aware of the prevalence here, of the disease known as the Rot in Europe; there, particularly in England, it is a terrible scourge. According to Youatt, a million sheep die annually of this disorder in the British Islands. Spooner thus describes the symptoms: First, a want liveliness, with paleness of the membranes generally, to which may be added a yellowness of the *caruncle* or fleshy excrescence at the corner of the eye. The sheep in a few weeks begin to shrink, and become flaccid about the loins. By pressure about the hips at this time, a crackling is perceptible; the countenance looks pale, and upon parting the fleece, the skin is found to have changed its vermilion tint for a pale red, and the wool is easily separated from the pelt. As the disorder advances, the skin becomes dappled with yellow or black spots. To these symptoms succeed increased dullness, loss of condition, greater paleness of the mucous membranes, the eyelids becoming almost white, and afterward yellow. This yellowness extends to other parts of the body, and a watery fluid appears under the skin, which becomes loose and flabby, the wool coming off readily. The animal occasionally dies shortly after becoming affected, but more frequently the course of the disease extends to from three to six months, the sheep gradually pining away.

One indication appears to always attend a fatal case of rot, viz: the presence of singular looking worms, named flukes, in the liver. These parasites are from three-quarters of an inch, to an inch and a quarter in length, and from one-third to half an inch in greatest breadth. There is a difference of opinion as to whether these worms are the cause or effect of the disease. Youatt says: "To a certain degree both; they aggravate the disease, and perpetuate a state of irritability and disorganization which must undermine the strength of the animal."

The rot in sheep is induced by wet seasons, or confining the animals on marshy pastures. The continued rains in England last year, were followed by disastrous increase of the disease, and investigations of its nature and the proper treatment, are occupying the attention of some of the leading scientific agriculturists there. The preventive as indicated by the above facts, is the proper selection of pasture grounds; and if the disease is induced by unfavorable seasons, then a mixed diet of hay, beans, or peas, with plenty of salt, must be resorted to. Although, as remarked above, this disease does not appear to have prevailed to any extent in the United States, it may have been induced in localities subject to the causes described, and it is well to understand, and as far as possible guard against its approach.

MEAT FOR HENS.—It should be kept in mind, that animal food is at all times of the year a stimulus to hens to lay. When they have abundant range, they gather insects of various kinds; but even then, and especially when cut off by confinement, or by cold weather, from this source of animal food, it is well to give them waste offal from the kitchen, bits of fresh meat, etc. Scrap cake from the hog-killing and oil-pressing establishments, is a cheap source of supply. Fresh bones, broken into small pieces, are greedily devoured, and much relished by hens at all times, and also promote their laying. These furnish the materials of which egg-shells are made, and without supplying something of the kind, it is as unreasonable to expect the hens to furnish their manufactures, as it was in old time to demand bricks to be made without straw.

For the American Agriculturist.

Hair Oil for Horses.

Amid the thousand and one preparations for improving the growth of hair, and making it fine and smooth, we have long wondered that no receipt has been devised for improving horse hair. Why not? tell us why not, Dr. Youatt, and Dr. Dadd, or any others of the profession. But at length, an end has been put to our inquiries: the horse is now to be provided for, as well as his rider. The oil has not, to our knowledge, found its way into the market, bottled and ready for use; but a receipt for making it has been published, so that every one can furnish himself with the invaluable article. Did we know to what man or journal to give the credit of this discovery, full acknowledgment should be made. Judging from the learned terms used, we think it must have originated at some great University. No common farrier could have conceived it. Well, here is the formula, free as air, just as we find it. The horse-Latin in which it is couched will be easy to translate:

℞ (take)
Brushus et curricombus.....ad libitum.
Elbow greesus.....quantum sufficius.
Blanketisus.....first ratus.
Stablus (in Winter).....warmus.
Fodderus.....never say diet-us but mealus et oatus.
Exercisus.....non compromisus.
The effect will be:
Coatus shinus.
Appetitus, wolfitus.
Muscularitus, two-forty-itus. HORSE'S FRIEND.

[The writer of the above can not have read the previous volumes of the *Agriculturist.* The recipe was published in Vol. XV, p. 248, and there credited to the American Veterinary Journal. It is good enough, however, to bear repeating, and we can warrant it to contain no injurious ingredients.—ED.]

The Tables Turned—Sending Blooded Stock to England.

It seems much like sending "Coals to Newcastle," for our breeders to ship Short Horns to their original homes, but this is actually being done. Since the June *Agriculturist* went to press, six animals of the famous Thorndale Herd have been shipped from this City to leading English breeders, in fulfilment of engagements entered into by Samuel Thorne, Esq., during his recent visit to Europe. The animals comprised four bulls, viz.: 2d, 3d, 4th, and 5th Duke of Thorndale, and Thane of Oxford, and the two heifers 4th Lady of Oxford, and Hero of Thorndale.

This is the beginning of what many think will grow into a regular trade, as it is well known that some of the finest English Short Horns have been bought by our own breeders at enormous prices, and such orders as the above are evidence that they have not depreciated here. The combined herds of Messrs. Thorne and Morris, now owned by the former, are acknowledged to be superior to anything else in this country, and not inferior to the finest herds of England; but it is with regret that we announce the departure of such fine animals as are now sent abroad. They ought to go west—not east.

The World's Fair of 1862.

Immense Structure, Building for the Great Industrial Exhibition of 1862.

We learn from the Gardener's Chronicle, that the plan of this magnificent building is completed. The structure itself is to be quite different from the one erected in 1851. It will be much larger and more imposing in its interior, while from without, its aspect will be of remarkable magnitude and grandeur. Externally the building will be 1,200 by 700 feet. The average hight is 100 feet, while the two iron and glass domes, 60 feet diameter at the base, will rise 250 feet, and will be the largest domes ever built. The guarantee fund subscribed for the building and exhibition amounted to £250,000, ($1,250,000,) up to March 15th. The time fixed upon for the exhibition is from the first of May until the 15th of October. It is located near the site of the former Crystal Palace, at Kensington, within the limits of the city of London. We hope that American industry and ingenuity will be largely represented, though our home troubles will greatly interfere with the interest that would otherwise be taken in the enterprise.

Honor to a Royal Agriculturist.

The Mark Lane Express of recent date says: "Our readers will learn with real satisfaction that his Royal Highness, the Prince Consort, has consented to act as President of the Royal Agricultural Society for next year, when the Great Show will be held in the Regent's Park. This is on either side no empty compliment, but a really auspicious omen for agriculture. The advance of the art well merits such countenance, and the Prince's own tastes point at once to him as the proper patron of such an occasion as the Show of 1862 promises to become. The world already knows of his Royal Highness' success as an exhibitor of stock; but it is not every one who has had the delightful privilege of inspecting the Park Homesteads at Windsor, or of seeing and hearing how thorough an interest both her Majesty and her Consort take in the different phases of the Home, the Norfolk, and the Flemish Farms. With an enlightened and enlarged mind well fitted to his position, the Prince gives everything in any way worthy of his attention a fair trial. We see this alike in the breeds of stock he cultivates and the different descriptions of machinery he employs. There are those first favorites, the little Devons at one farm, the Herefords at another, and the Short Horns at a third; with, moreover, an especial place for the dairy. The day on which we had the pleasure of going round, there was a new grass-cutter on trial; while one of Smith's steam-cultivators has been at work at Osborne, and another of Fowler's at Windsor. Both the Queen and the Prince make it their care to see such inventions well tested, and the Royal pair are equally zealous in marking the improvement of the animals. The Prince is known to be a capital judge of farm stock, and there is not a beast on his domain but that he has the history and value of, at his command."

For the American Agriculturist.

Experience in Cheese Making.

Diogenes says of Mrs. Homespun, that she knows of no way to make a cheese, save from pure new milk, and certainly "where ignorance is bliss 'twere folly to be wise." We made over a tun of cheese last year, and made it all from new milk, for economy's sake.

When I first commenced making cheese some year's since, I used to skim the night's milk for family butter, and thought I was a very saving woman; now I stir the cream into the cheese vat every morning, having first heated it up in a kettle by itself. And now I propose to give four reasons why it pays better to do so.

1st.—The cream will give me more pounds of cheese than butter. 2nd.—The cheese will taste better. 3d.—In seasoning, the cheese will hold its weight better. And last and not least, it brings from one to two cents a pound higher in market. The greater part of our cheese sold for 10 cents per pound last year, which was the same price as for butter, except in the Fall, when the latter sold for a shilling a pound. Roe's Patent cheese vat is a great saving of labor. We had it last year for the first time, and now we would not be without it. The newspapers say they want no "puffy" cheese in the New-York market, and as far as my experience has gone, it is want of salt that makes cheese puffy, while too much salt makes the cheese hard or "white oak."

We use the ground dairy salt, a large teacupful to twenty pounds of cheese, but if the curd be soft, it will take more, owing to the whey that will run out and carry part of the salt with it. We press cheeses 48 hours in a self-pressing apparatus, cover them *all over* with cloth, and in the time of flies put a little Cayenne pepper in the whey butter oil with which we rub them.

The flies are the great bugbear that prevent Illinois women from making cheese. They are much more prolific here than in the East, but if the last two items I have mentioned, are attended to, and the cheese turned, oiled and rubbed every day for a month, and every second day afterward, there will be no trouble. Last year we made enough oil from the cheese whey for kitchen lamp use, besides cheese curing. When drawn off from the vat, let it stand twenty four hours in the whey tub, skim it as you do cream, and churn twice a week. The butter is put in an iron pot and boiled down, taking care that it does not scorch. When sufficiently cooked, a thick scum will have formed on the top, which must be skimmed off, and the oil poured into a stone jar for future use.

Carroll Co., Ill. M. J. STEPHENSON.

Improvement in Cheese Making.

We find the following extract in the Dairy Farmer, without any indication of its origin, and do not therefore endorse it, but give it as suggestive of experiments which may be valuable. Recent investigations prove that a large portion, in some cases as high as one third, of the cheese is wasted in the process of manufacture; and any method which promises to save this waste, is worthy of attention. The writer says:

"In June, 1859, I finished a few cheeses after the following manner: When my curd was scalded, (I practice thorough scalding,) I threw into the vat about four quarts of salt—sometimes only three for a cheese of 50 to 60 pounds, stirring thoroughly. Those which went into the hoop before being well cooled off, acted badly; but when I took time and means to cool sufficiently, the cheeses were fine. On the whole, I did not like the process and abandoned it.

In 1860, I commenced again, changing the programme as follows: After scalding, I drew off the whey, leaving just enough to float the curd, and began to cool off, hurrying the process by pumping in cold water and changing often. Then, to a curd of say 60 pounds, a little more or less, I threw in sometimes three and sometimes four quarts of salt, and stirred till well cooled—then drew off the salted whey, and threw it on the compost heap—put the curd to press, and pressed rapidly and thoroughly. And now for the result. I lost from my whey tub about three pails of whey and some salt. I gained in this, that my dripping tub under the press never had a particle of cream rise upon it, and in having a cheese that gave me no trouble in curing, and which, when sent to market, sold for the very highest price, and called forth the unqualified approbation of dealers, as being perfect in all respects—fine flavored, very solid, (not porous,) and very fat.

And now let me talk to the experience of dairymen. In the old fashioned way of breaking up and salting a curd, more or less bruising of the curd to break the lumps, in order to get the salt evenly distributed, is necessary, and when put to press, the white whey runs off freely—in other words the cream runs off, and of course with it the richness of the cheese, and more or less of its weight, and if the curd is very dry, you are liable to get your cheese too high salted, and, if not, the reverse.

My experiments clearly prove that a curd salted in whey, will retain no more salt than it needs, and that as every particle comes in contact with the brine through the operation of stirring, no bruising is necessary. Whether this is the philosophy of it or not, I am not chemist enough to determine, but I do know that if there is no discharge of white whey, or cream, it is retained in the cheese, adding to it both richness and weight as a remuneration for the extra salt and the waste."

Advantages of Broad Tires for Carts.

These are made from four to six inches in breadth, and, usually, of somewhat thinner tire, to save weight. The wheels have to be a little heavier to accommodate the tire. The advantages over the common narrow tire are several. Used upon the highway, they tend to fill up the ruts made by smaller vehicles, and help keep the road track in good repair. So highly is this advantage esteemed by some turnpike companies, that they exempt all broad tired carts from toll. If they were generally used, they would act upon the road bed very much as a heavy roller, keeping it solid, and preventing washing, to some extent.

The broad tire also diminishes the resistance made by the road bed or soil over which the wheels pass. Upon a perfectly solid bed, like a plate of iron, or iron rails, this resistance is entirely removed, or, at least, brought to its minimum. But upon a common road, it seriously interferes with their progress. The wheels sink into the dirt, more or less, according to the weight of the load and the hardness of the road. Upon meadow lands, the resistance is still further increased by the softness of the soil. The broader the surface of the wheel, the less it will sink into the soil, and the more easily the load can be drawn. It is not necessary to state the precise ratio in which this resistance is diminished, to make it apparent. Other things being equal, a team will draw a heavier load with a broad tired cart, than with a narrow one. If this advantage amounted to only a hundred pounds to a load, it would soon pay for the extra cost of the tire.

It also saves the cutting up of meadows. More or less carting is necessary over fields in grass, at seasons of the year when ruts will be made with the narrow tire. This not only mars the beauty of the field, but diminishes the yield. The roots of the grasses are torn and destroyed, and the track of the wheel is generally barren. With the broad tire, little if any damage is done. It also enables the farmer to use the cart on soft or swampy lands that would be impassable with narrow tire. It may be true that these wet lands ought to be drained, but they are not, and will not be for some years. While waiting for tiles, the broad tired cart is needed.

CONNECTICUT.

Lime as a Manure—Soil Analysis.

Among the numerous responses to our lime questions, we have received a very good address delivered before the Farmers' Club of Chester Co., Pa., by Geo. A. M'Call. The views of Mr. M. are in the main correct and useful. He, however, makes a chemical error in stating that the peroxide of iron is hurtful to vegetation, and that lime withdraws a portion of its oxygen, producing the protoxide, which is "perfectly harmless to vegetation." The contrary is the case; the salts of the protoxide are soluble, and when absorbed by plants, are poisonous; but the peroxide is insoluble, and not injurious. Nor will lime reduce the peroxide to a protoxide. Lime, as he states, is an oxide of calcium; but only one equivalent of oxygen unites with one of calcium, and that it already has in the form of lime. We also differ from Mr. M. as to the value of having a soil analyzed, "at little expense and trouble." An analysis of a soil costing less than $30 to $50 is of little value; indeed, after much practical study of the subject, we doubt the utility of any soil analysis as a guide to farmers in the application of special manures. As an aid to scientific investigation, analyses of soils, manures, and plants, are valuable.

Improvement of Pasture Lands.

The first inquiry a skillful physician makes of his patient, is: "What are your symptoms?" Then, the peculiarities of constitution are noted, and the treatment decided upon. A quack cares little for symptoms. His panacea covers every case. "Buy my pills," is his one prescription. Those who have but one course to recommend for treatment of failing pastures, resemble the quack doctor. One man insists that plowing is the cure-all. He argues that the grasses "run out" for want of seed, and he directs to cultivate with hoed crops a year or two, followed by Winter grain; then re-seed, and all will be right again. But let him visit some sections where natural pastures abound, fields which have yielded luxuriant grass crops for scores of years without the harsh surgery of the plow, and he will find his theory "run out" much sooner than the grasses. Another authority urges the water cure. "Turn on the adjacent stream," he says, "flood the land repeatedly through the season, and grass will grow while water runs." All very well, doubtless, in some places, on well drained ground, but productive only of coarse rank growth of undesirable sorts on other soils.

A few conditions are necessary for the luxuriant growth of grass; adjacent circumstances must determine how to secure these conditions. Thus, the soil must be suited to the kind of grass, otherwise it will soon run out, and can only be kept by plowing and re-seeding often. For instance, one writer says, "whoever has limestone land, has blue grass; whoever has blue grass, has the basis of all agricultural prosperity." The estimate is undoubtedly too high, but the fact of the suitableness of the limestone soil to blue grass, is unquestioned; and the thousands of acres of Kentucky and Ohio pastures perennially productive of this species, are evidence of the truth of the statement. So then, if a blue grass pasture has failed on a soil unsuited to its permanence, the remedy is to seed with some other variety which will be at home on that particular soil.

Whatever the soil, no pasture ground will remain good long, when overstocked. Though none dispute this truth, yet half the complaints of failing pastures come from neglect of it. Many err in turning in stock before the roots of the grass are strongly entrenched in the soil. Not a hoof should enter the field the first season after seeding, nor the following Spring until the grass is well started, and it should then be fed but sparingly until a thick matted turf is formed; and afterward it should never be pared to the very ground.

Many pasture grounds will need manure in addition to what is left by cattle. An occasional dressing of 300 to 500 lbs. of bone-dust per acre, will make itself felt in the increased product of grass. Where only cattle feed upon grazing lands, go through the field two or three times in a season and scatter the lumps of manure with a maul or other implement; otherwise a few spots will be over-fed and rank, while the surrounding soil may be lacking fertility.

It will seldom pay to break up a natural pasture. A thorough scarifying with a harrow, and the application of manure with a little seed, will in most cases restore it effectually. In any case, avoid the one remedy principle. Take into consideration all the circumstances, and give the treatment which the particular symptoms indicate.

Cutting Next Year's Grass.

"Don't leave your wages behind you," is a caution often given in the hay field, when the mowers fail to shave the surface as close as the scythe can be made to cut: or if the horse mower be used, the knives are set to run as low as may be. The objection has been made by some, that these instruments are wasteful on account of the high stubble left; because, argue the objectors, an inch at the *butt* is worth two inches at the *top*. This is far from certain. As is well known, the lower part of the stalk is the first to harden and stiffen by the change of much of its substance into woody fiber. This adapts it to support the weight added to the upper part, in the growth of flower and seed, but unfits it for feeding; so that there is but little loss of food when one or two of the lower joints are left uncut.

But even granting that the whole stalk is valuable for fodder, some regard must be had to the future grass crop, unless on ground intended for immediate plowing. Cultivated grasses in our meadows are perennials, depending for future growth and propagation on the parts under ground as well as upon the seed. When the top is removed by mowing, the whole after-growth must come from below. In herds-grass for example, at the base of each stalk small offsets or bulbs are attached to the main bulb from which the stem springs. These contain nourishment eliminated from the soil and the air, by the roots and the leaves. It is designed as food for the young shoots of the next season's growth, which will spring from the bulbs, just as the parent stalk grew from the main bulb. In the natural growth of grass, the leaves and stalk continue to supply these bulbs with nourishment until late in the season, when the stem withers. Cutting the stalk during or immediately after blossoming, does violence to the nature of the plant, by stopping supplies intended for future growth. This is in some measure unavoidable, but if the two lower joints of the grass be left, a sufficient after-growth will immediately spring up, to afford a very fair stock of material for the bulbs. Where the stalks are cut close to the ground, unless rain follows immediately, the burning sun scorches them down to the very pith of the parent bulb, and we have seen whole acres of timothy killed in this manner in a single season. The effects of heat are felt all the more because the lower growth has been shaded during the whole season, and is illy prepared to resist the full power of the sun.

We therefore advise the economy which looks to the future of the meadow. Do not cut next year's grass in the great eagerness to make the most of the present crop. It may also be remarked here, that immediately after mowing is a very favorable time to spread composted manure upon the meadow. It acts as a mulch, preserving the bulbs and roots from scorching, as well as fertilizing the ground and quickening the young growth.

Hints for Haying Time.

This is preeminently the haying month throughout the Northern States. And it is one of the most important operations of the whole year. Probably the statement is not over-drawn, which makes the annual hay-crop of the single state of New-York exceed in value the annual gold crop of California, taking it in the long run. The importance of cutting, curing and storing it in the best manner, can hardly be over-estimated. A few hints on this topic:

All are not agreed as to the best time for cutting timothy; some claim that it should not be touched until the heads are plump and full of seed, others that it should be cut as soon as the stalk is full grown and the heads are bursting into blossom. The majority hold the latter view—and wisely, we think, especially where there are large meadows to be cut. If it be left until the grass is fully ripe, before commencing to cut, the last part of the crop will have become hard and dry, certainly if there be only a moderate force of workmen, and if many rainy days occur. Grass cut while green, contains much more nutriment, and is more easily eaten than when over ripe. In the process of ripening the stem, the starch, sugar, and gum are converted into woody fiber. This is the useful design of nature to stiffen the stalk, that it may sustain the seeds until they are ripe, but it destroys much of the plant's nutritive qualities. What we want in hay, is to preserve as much as possible of the food qualities of good grass. It is perhaps no extravagance to say that good, bright straw is about as valuable for fodder, as grass cut after it is fully ripe. There is also this important consideration in favor of early cutting, viz: the roots of the grass become less exhausted, and yield a more vigorous after-growth. Nor is it a small item that green cut hay sends fewer foul seeds into the manure heap.

But the *mode* of curing is hardly less important than the time. There is good sense in the old maxim, "Make hay while the sun shines;" but hay may get too much sunshine. If grass is over-dried in wind and sun, it loses much of its sweetness and richness. Who does not know that distillers of plants always dry them in the shade, thus preserving their oily portions and fine flavors? So with hay: it may be so dried up by the sun as to render it little better for fodder than so much brush-wood. We will thank the sun to dry off the dew, and to just wilt our grass, then we can almost dispense with his services.

Or, to be a little more particular: We will cut grass in the forenoon, and turn it over in the afternoon. Next day, as soon as the dew is dried off, we will rake it up into windrows and let it lie until the middle of the afternoon, when, if well cured, it may be carted in, or cocked up. Next day, if the weather be good, the cocks may be opened awhile, and then carted in, or stacked. If not convenient to house it at once, it may stand in the cock uninjured for several days. If rain should get into the windrows or cocks, they must be spread and dried. Just here the *hay caps* come in play; and each cock of hay may with very little expense be safely tented, and be almost as secure as though stored in the barn.

The manner of putting up the cocks is no trifling thing. It is not enough to roll the hay into big bundles; for if thus managed, the cocks will absorb rain instead of shedding it, and will be very apt to blow over in high winds. Let them be laid up carefully, by placing one fork-full on top of the other, making the heaps tall and not broad, and dressing them off with the pitchfork, like a thatched roof. They will then stand several weeks of all sorts of weather, uninjured.

Sometimes, it is found necessary to get in hay when a little too green. In such cases, it is well to mix in an occasional layer of old hay or dry straw. This will absorb the surplus moisture of the green hay, and the dry fodder will itself be improved by it. It is also an excellent plan to have several places for storing hay, so as not to be obliged to put in more than one load to a single mow in a day. Let it not be trodden down much when first put in.

And before leaving the topic, let us remind the reader that much labor, time, and expense will be saved by the use of the "horse-pitch fork" for unloading. We have described and illustrated several. The poorest one we have ever seen is far better than none. Every farmer having half a dozen or more acres of grass, should get the best one within his reach. They are now on sale in most parts of the country. The best kind, with ropes and pulleys all complete, costs not more than $10 or $12, and will soon pay for itself.

Air Ducts in Mows.

Hay, however well cured, will contain more or less moisture, unless the process of drying has been carried so far as to render it entirely unfit for fodder. Few seasons are so favorable that several loads are not deposited in the mow somewhat damp, either wet by a sudden shower, or carted in before entirely ready, to escape injury from a threatened storm. When a large amount of hay or grain is packed closely together, it requires but a small degree of mois-

AMERICAN FARM SCENES—SUMMER—FROM AN ORIGINAL SKETCH BY F. O. C. DARLEY.
(Engraved for the American Agriculturist.)

ture to cause partial fermentation and consequent heating of the mass. The injury resulting from this process, will of course depend upon the extent of the fermentation. If violent, the whole substance is disorganized, and rendered entirely worthless for any purpose but manure. If there be but slight chemical change, enough decay may follow to fill the mow with dust from the rotted particles and the mold engendered, and such hay will be prejudicial to the health of stock. Its effects are particularly noticed on horses, and when it must be used, careful feeders will see that it is first cut and wet, and if practicable mixed with ground stuff. A plan to remedy the difficulty, partially, at least, is suggested by a correspondent of the *American Agriculturist*, at Mount Union, Pa., as follows:

First—Take three pieces of board, three inches broad, and in length the hight of the mow; nail them together as if for a square box, making the fourth side with slats about two feet apart, and set these ducts upright at one side of the mow, at intervals of six or eight feet. Second—Take two pieces of board three inches broad, and use slats as above on two sides, making a square tube with two sides open; the length to be the width of the mow. Connect these horizontal ducts with the upright ones, by means of a loop of hoop iron, so that the horizontal ducts may be raised or lowered at will. When the mow is empty, these last ducts may all be raised to the top of the bay-way, and when filling at harvest, they can be laid in at any distance required; about six to eight feet apart seems best. This will secure a circulation of air through the mow, and carry off much of the remaining moisture.

The Harvest Time.

The scene represented above, will be enacted on thousands of farms during this harvest month of July. The seed sown in hope, watered with the sweat of the husbandman, kindly cared for by the Hand that spread the snow covering, sent the early rain, and withheld not the quickening sunshine, now yields its precious increase—some thirty, some sixty, some an hundred fold. A wonderful history is written on every field of waving grain. Here are raised millions of structures such as no art can equal, stored with the elements of life for man. The root, the leaf, the stalk, the bending ears, each is a marvel—the result of processes which chemistry can only guess at, and never imitate. Had one of these processes failed, who can measure the disaster that must follow—FAMINE. Only those, who like the suffering thousands of Kansas have seen its gaunt form by their firesides, can know the fearful significance of the word. No wonder the husbandman enters the harvest field with a light step, a thankful heart, and a song of triumph.

It adds greatly to the joy of harvest time to feel that much of its treasure is due to the skill and labor of the cultivator. Though rain and dew and sunshine have been distributed by an impartial hand upon the fields of the careful and the thriftless, yet nowhere is the truth more plainly written, "God helps those who helps themselves." The clustering stacks which adorn the well ordered farm, are monuments to the skill, industry, and perseverance of the owner; and not less do the meager harvest fields reproach the ignorant and the slothful; each weed seems to point a finger of scorn, and every thistle is like a stinging rebuke. He who can show his barns filled with plenty, may rightly enjoy an honest pride, equally with him who returns from battle, flushed with the glory and the spoils of victory. By arduous and self-denying labor he has triumphed over stubborn soil and perverse storms, and his conquests bring more satisfying joy than those of the warrior; for he has left behind him no desolated districts, nor bereaved households to sadden recollection.

The picture before us needs amending to bring it up to the times. The cradle is already becoming antiquated, and will soon repose with the sickle, driven from the field by the victorious reaper. Most of our readers also will exclaim against the introduction of females in the labors of the harvest field. That is not an American institution—though Darley, in a moment of inspiration may have had a presentiment of what may be necessary, should the present war be prolonged, and many more of our country's sons feel impelled to leave the peaceful field of agricultural labors for the field of conflict. No doubt American women have strength and patriotism enough, if the times of '76 return, to emulate their grandmothers, and care for the homestead, while their partners are defending their country.

We again take occasion to commend this beautiful series of lithographs to the notice of our readers, as well worthy a place in their dwellings. They are of large size, 15x19 inches finely executed, and sold for $5 the set of four. We can procure them for any who may wish it.

Clover in an Orchard, etc.

J. Cornelius, Union Co., Pa., inquires about the effect of clover on an orchard. We do not know that there is any foundation for the popular notion that "clover is *poisonous* to fruit trees." However, a thick mat of clover, growing near the trees, would draw heavily upon the soil, and also shade the roots too much; and in this respect a lighter grass would be preferable. No grass or other crop should grow upon the soil occupied by the roots of the trees; as fast as the roots extend out, diminish the amount of ground cultivated; and when the roots fill the ground, and the branches shade it, it is hardly worth while to attempt to get much of any other crop than fruit, if fruit be the main object. The surface should be kept free from weeds and foul stuff, and a frequent application of manure to the soil is repaid in larger, better fruit, and more of it. For a few years, a considerable portion of the soil between the rows of trees may well be devoted to hoed crops, with an occasional crop of peas, which leaves the ground clean. The more work you ask of a soil, the more you must *feed* it—with manure. A growth of clover turned under, is excellent food for a soil, in an orchard, or anywhere else.

Notes on the Borer.

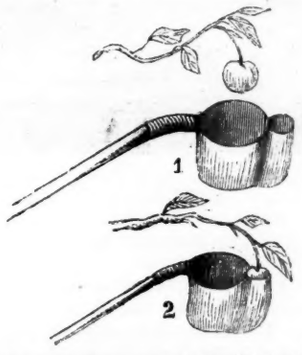
A correspondent of the Rural New-Yorker who has apparently observed the habits of the apple tree borer carefully, states that the insect comes out of the body of the apple tree fifteen or twenty inches from the ground, about the 15th or 20th of June. Soon after this, the female begins to deposit her eggs, not by boring, but by placing them in the small openings of the cuticle or outer bark of the tree, near the ground. It appears that all these eggs are deposited between the 20th of June and the 20th of July. He recommends in the last week of June to clear away the earth from around the body of the tree down to the root, then with a trowel or similar instrument to scrape off the loose bark and dirt from the trunk as clean as may be, for twelve or fifteen inches from the ground. After this preparation, rub in hard soap until all crevices are filled, and finish by rubbing with the flat hand till the whole space is smoothly covered with a thin pellicle of soap, leaving no place for the insect to deposit her eggs. The soap will remain until the egg season is passed, and as it is washed off, will not injure, but benefit the tree.

Cultivation of the Quince.

Why is the quince bush so generally condemned to some out of the way corner in the back yard, where old shoes, broken crockery, and other household rubbish are thrown? When properly cared for, it is a beautiful ornamental shrub, with blossoms superior to those of many a prized foreigner; and its habit of growth makes it an admirable connecting link between the smaller shrubs and the standard trees. What more beautiful sight in Autumn than its bending limbs loaded with golden fruit? And what housekeeper thinks her winter stores complete without quince jelly, marmalade, or the fruit preserved plain? The treatment of the bush has been shabby, and very often it has come into disfavor because it did not repay *neglect* with a fine yield of smooth handsome quinces. But it responds well to generous culture, and fruit-growers have found it a profitable crop for market. All good specimens sent to this City are eagerly bought up, and at prices which must make its cultivation remunerative. They have usually sold readily at from $1 50 to $2 per 100.

The quince should have a rich, deep, mellow soil. Although the roots spread near the surface, depth of soil is needed to guard against drouth, to which the tree is very sensitive. The apple quince is most prolific, and the fruit is generally preferred to other varieties. The trees need an area of ten or twelve feet, and should therefore be set at about that distance apart. Deep cultivation, such as is required for the standard pear, will not do for the quince, because of the shallow depth at which the roots grow. A light hoeing, and mulching with tan bark, leaves, straw, or other suitable material must be depended on to keep down weeds, and supply moisture. An annual dressing of the surface with salt is generally recommended, but respecting the utility of this, we have some doubts. Little pruning is needed; only enough to clear out suckers and sprouts, and prevent rubbing of the branches. The apple tree borer (*Saperda bivitata*) often attacks the trunk, and the same precautions are necessary for prevention, as in the case of the apple tree.

The quince is easily propagated by cuttings, or layers. Seedlings are not certain to be true to kind, and it is therefore preferable to procure stock from a growing tree, if rooted plants of known variety can not be obtained.



A Cheap and Convenient Fruit Gatherer.

The accompanying illustrations represent a very convenient, cheap, and easily made apparatus for picking fruit, devised by Mr. Alfred H. Thorp, Fairfield Co., Conn., who forwarded drawings of it for the *Agriculturist*. To make it, take a strong wire, and bend it to the shape shown in the cut. Cut grooves the size of the wire on the opposite sides of the end of a pole, in which place the ends of the wire hoop, and secure them by winding with strong twine, or, what is better, with fine annealed wire. Sow a bag of stout glazed muslin to the rim of wire, and the implement is complete. The bag should be large enough to hold ten or a dozen fair-sized apples. Glazed cloth is better than plain muslin, because it is not so readily caught by the small branches. The pole could be made with a socket or rings near the lower end to splice it, if necessary, to reach fruit on high branches.

The illustrations show the manner of using the apparatus. It is raised until the apple enters the larger bow of the rim, (Fig. 1,) then moved until the fruit is caught in the smaller one, (Fig. 2,) and a gentle pull deposits it safely in the bag. When nearly filled it is lowered and emptied.

Mr. Thorp used such an apparatus for gathering all his Winter apples, and he says the work was done more quickly and in better order than in the old way of using ladders and climbing about in the trees. Danger of injuring the limbs both of the tree and the boys, was avoided, and many fine specimens on the ends of the branches were secured uninjured, which must otherwise have been shaken down and bruised. The apparatus is not patented, and all are therefore free to make and use it.

How to Start a Vineyard—Profits of Grape Culture.

With most persons, the first and great question is, Will it pay? Not a few people are satisfied to plant a vine or two, without troubling themselves with the inquiry as to their profitableness. It is enough for them to know that the grape-vine makes a pleasant shade around porch and window, and in clambering over the arbor. A very gratifying employment it is, to watch its growth from year to year, and to prune and train it into proper shape and abundant productiveness. How luscious, beautiful, and healthful the fruit!

This is all very well, but there are many persons, just now, who are inquiring about grape-growing as a business—they want to know whether it can be made profitable, in the same way that orcharding and market-gardening are profitable. And how is the work to be managed? We believe that grapes can be raised with profit, the fruit being used both for wine-making and for dessert.

Of course, the nearer the vineyard is to one or more large cities, the better; as then the grapes can be got to market quickly and in good condition, to meet any demands, and on both grapes and wine there will be quite a saving in cost of transportation.

A selection of suitable soil and exposure for the vineyard, is a matter of much importance. The grape is a child of the sun, and luxuriates in light and warmth. A porous subsoil is almost indispensable to success. If in the site chosen there is anything like standing water, or what is called a "springy" state of the soil, it must be remedied by thorough draining: otherwise, the vineyard had better be given up. A slight inclination of the surface to the south is desirable, though not essential; but a steep slope to the north would be fatal to success. Natural or artificial shelter from cold winds is a good thing. A high hill, or stretch of forest trees on the north and west sides, will hasten the early growth and maturity of the crop very perceptibly. For wine-making, a site mid-way between the damps of a valley and the cold winds of a hill-top, is most preferable.

In preparing the soil for planting, we should advise thorough plowing and subsoiling. Run the double Michigan plow through first, about fourteen inches deep, and follow with a large sub-soiler. Let a plentiful manuring go along with this. Instead of using simple barn-yard dung, we would make a compost of such manure mixed largely with woods-soil, or rotted sods, and chip-dirt, adding also a supply of ashes or bone-dust. Dr. Underhill, of Croton Point, whose grapes and wine have become famous in this city, applies, in some cases, from twenty to thirty bushels of bone-dust to the acre; and in others, uses a compost of swamp-muck, leaf-mold, rich loam, sods, weeds, grape-cuttings, stable manure, and potash. For fruit-raising, ample manuring is quite desirable; but for wine, all that is needed, is to bring the soil into a condition suitable for raising Indian corn. Dr. Underhill says that from $50 to $75 a year may be

profitably spent in manuring and cultivating an acre of grapes for market.

The land having been brought into good condition by one season's previous tillage, the vines may be set out, if for wine-making, five or six feet apart in the row, and the rows about the same distance asunder. This will take about 100 vines to the acre. Good, strong, yearling plants are better than cuttings. Train the vines to a temporary stake, the first year, keeping down all but one good cane. The vines designed for fruit-raising, should be set ten or twelve feet apart in the row, and the rows eight to ten feet wide. For the first two years, some kind of hoed crop may be grown between the rows, which will go far towards paying the interest on the land before it bears a crop of grapes. The stakes for the wine-producing vines should be about seven feet long, and be driven into the ground a foot and a half. They may be of cedar, chestnut, or locust, or other durable wood. The trellis for the fruit-growers may be made of cedar posts eight or ten feet apart, about six feet high above ground, and with four lines of No. 12 wire stretched from post to post. The wire may be fastened to staples, or a slight cut may be made with a saw in the post, and the wire drawn around it and fastened with a twist. Galvanized wire is the best, but common wire may be kept from rust by painting, or by tarring it. For the latter, heat the wire in the bundle, and put on the tar while it is warm.

As to the best mode of pruning for such a vineyard, we need not speak at length. The vines for wine will undoubtedly be best pruned more or less according to the common German method, as practised at the West. Those designed for fruit, will be trained on the spur or long cane system. In either case, the principle will be followed, of taking the fruit from wood of the preceding year's growth. Each year, the ground is to be plowed in the Spring, and cultivated several times through the Summer, keeping down all weeds. For this purpose, it will be needful to use the hoe somewhat, but the more the work can be done by horse-power, the cheaper it will be. After the fruit begins to color, cultivation ceases, and all treading the ground between the vines is to be forbidden. In the month of June, when the fruit is well set, the vineyardist should go through the rows, and pinch off from one-third to one-half of the clusters, leaving only the best to mature. This is especially needful in the case of that raised for dessert. There will be less fruit, but it will ripen earlier, the clusters and berries will be larger, sweeter, and higher flavored, and will command a higher price in market. This is Dr. Underhill's method, and it is by this, in great part, that he has gained his reputation. And to this, we must add, that he who wishes to command the market and his own price in it, should allow no fruit to go from his vineyard except the ripest, and best in every particular. Every cluster should be examined, the unripe and defective berries cut out, and then they should be nicely packed in clean, new baskets.

The above is the ordinary routine of grape culture when pursued with an eye to the greatest profit. A gentleman, living near Reading, Pa., gives the following estimate of the cost and income of an acre of vineyard in his vicinity:

The whole expense, including cost of land, outside enclosure, vines, trellis work, and all labor, is.	$642 00
Cost of wine press, shedding, casks, etc.	200 00
Making the whole capital invested	$842 00
The average yield is about 640 gallons of wine, worth at the press 80 cts., or	$512 00
The yearly expense	80 00
Leaving a clear annual profit of	$432 00

Mr. Buchanan, of Cincinnati, after giving the estimates of others, subjoins his own, making full allowance for losses by rot, fermentation, frost, and various wastes:

Cost of vineyard per acre, say $250; interest per annum	$15 00
Cost of attending, per acre	60 00
Cost of making the wine	25 00
	$100 00
Probable average annual product, 200 gallons wine, say at $1	200 00
Supposed profit per acre	$100 00

But should the wine bring only 75 cents per gallon, it would still leave a profit of $50 per acre, which is large enough, and more likely to be the sum realized throughout the country."

Dr. Underhill estimates the cost of establishing a vineyard, at about $400 per acre, and, when properly made, as being worth, as a permanent investment, from $1,200 to $1,500 to the acre.

We give these several estimates, that the uninformed reader may form some general idea of the profitableness of the business. Of course, the profits will vary according to the price of land and labor, distance from market, variable seasons, etc. The best peach orchards of New-Jersey and Delaware, average a yearly profit of from $75 to $100 an acre; but then, they last only six or seven years, are subject to many diseases, the crop is liable to be cut off by frost; and in very productive years the market is apt to be overstocked, and the fruit being very perishable, has to be sold at any price. But a vineyard, well managed, lasts a life-time, and increases in productiveness just when the peach orchard is beginning to fail. The crop is less liable to suffer from frost or disease, and the market is in no danger of being glutted with either grapes or wine.

It seems desirable, on many accounts, to combine the growing of grapes for fruit and for wine in one plantation. The fruit yields the speediest return, while the profits are greatest on the wine, and it can be sold all the year round. The smallest clusters of the entire vineyard can be used for wine-making, the largest being reserved for sale as fruit.

There are several other items which might well be considered here, but they must now be deferred. In particular, as to the varieties of grapes best for wine and for fruit in different localities, our readers are referred to an article on Grapes in the April No. of the *Agriculturist*.

A Grape Worth Watching.

At the annual meeting of the Newburg Horticultural Society, last Summer, a new native grape was exhibited by Mr. Woodward, of Mortonville, Orange Co., which attracted much attention. It was styled the "Skunnymunk Grape," from the mountain on which it was discovered. It was said to ripen before the 15th of September, and to be perfectly hardy even in seasons where peach tree blossoms were destroyed by the cold of Winter. A writer in the Country Gentleman describes it as follows: "Bunches well formed, compact; berries all of one size; shoulder on one side quite long, similar to the Delaware; the color a coal black, skin quite thin, flesh white, with red colored vines, and no toughness of pulp discoverable. Sweet, juicy, aromatic, it somewhat resembles the Concord in flavor, but I think is in every respect better. The clusters are larger, weighing full a pound."

Another spectator who got a taste of it, speaks of it in high terms. He says it is of the Labrusca class, ripens ten days earlier than the Concord, often the last week of August or first of September. He was told by those who had seen it for several years, that it was hardy, free from disease, and an abundant and regular bearer. If it ripens as early as this, it will be valuable for districts where the Isabella and Catawba do not succeed. From all we can learn about it from private sources, we judge it will rank in *quality* with the Concord and Logan, and be desirable for its fine appearance and earliness.

A Glimpse of a French Vineyard.

A young friend now traveling in *la belle France*, sends us an occasional letter which is so appropriate to the columns of this journal that we desire to share it with our readers. Here are a few passages from one of them:

The immense plains near Orleans, and indeed along a large part of the Orleans and Poitier's road from Paris to Bordelais, are devoted largely to grain and vine-growing. Much of the soil around Orleans is low and seems to need draining, though it is far from being marshy. The department of Loire, in which the town is situated, has, besides its grain-fields nearly 75,000 acres planted with vines, furnishing a yearly average of 1,200,000 hectolitres of wine. (A hectolitre is about 23 English gallons.) These, however, are not the best wines of France. .....I was cordially received by M. D——, at his vineyard, near Orleans. The species of vine most raised here is the Auvanat. The Isabella and Catawba of America, are known here, but, as might be expected, do not thrive as well as their own native grapes. In answer to my inquiries as to his method of establishing a vineyard, M. D., said: "In the Fall, we make our cuttings by taking off the shoots at the junction of the present year's growth with the last. At this point is a "laton" or ring, from which roots readily start. These twigs are cut into proper lengths, tied up in bundles and buried in dry soil a foot deep. In the Spring, they are found calloused over, and young fibers are ready to start. They are then planted in holes about eight inches deep, made by a sharp iron punch, the rows being three feet apart. The first year, they are allowed to grow as they please. In the Fall of the second year, they are cut back to three buds from the ground; and they are treated in the same way for two years more, the object being to form a strong stump about four inches high and two inches thick, from which fruiting canes can always after be trained at pleasure. The fourth Summer, one strong shoot is grown, keeping down all others, from which fruit is taken the following year.

If several shoots start from the stump during this fifth summer, all are broken out except the one nearest the ground. The cane is cut off in the Fall at from three to four feet from the root. We aim to get our fruit as near the ground as possible. And to aid in this, in the Spring, just before the buds start, we bend over the cane into a circle, so as to make the extremity almost touch the ground. This checks the too rapid rush of the sap to the upper buds, and causes the lower ones to fill out as plump as the higher. In May and June, the canes are tied permanently to their stakes with willow twigs; the stakes being only about four feet above the ground. In France, stakes are a great item of expense. One servant man and his wife can tend a vineyard of six acres, except in grape harvest, and the time of fall trimming, when large forces have to be employed."..... Some

vine growers practice uncovering a part of the roots in Spring, to check the too early starting of the buds, and to keep the roots from growing too near the surface. A thorough manuring is given once in four or five years. After a vineyard is fifteen years old, it is thought best to break it up, and begin anew on another piece of ground. If a less severe system of pruning were practised, it is believed a vineyard would last a life-time.

Osage Orange Hedges.

A correspondent of the "Field Notes" recommends to sprout the seeds of the Osage Orange by placing them in a warm moist atmosphere, carefully excluding all light or sunshine. Then plant them in a seed bed. The young plants are very tender for the first two weeks after sprouting, and should be in a light, friable soil, that will not bake after rains; if it should, the surface must be picked loose, about the time the plants are coming up. He says "I have never known the plants to freeze out after the first season, (we have.—ED.) to prevent which, they should be taken up in the Fall, and packed in a cellar in moist sand. I have grown a good fence in four years after setting in the hedge-row, and every one that thinks he can do the same in less time, will soon find he is mistaken."

Notes on Strawberry Cultivation.

Extensive Plantation—Specimen Field—Best Sorts—Manner of Treatment—Cheap Baskets Wanted.

We recently had an agreeable call from Mr. J. Knox, of Alleghany Co., Pa., the most extensive strawberry grower in the Atlantic States, if not in the Union. He has also a large area devoted to raspberries and blackberries. We were particularly interested to learn his success with the fifty acres of strawberries which he has now in bearing, and drew from him some important hints. In a specimen field he has one hundred varieties, in as many different rows, where, for his own satisfaction, and to prove new sorts, he exhibits nearly everything heard of in the strawberry line. This is of great value to cultivators, and a large number visit his grounds during the season of fruiting.

The two varieties most largely grown, are the Wilson's Albany, of which there are thirty acres, and the Triomphe de Gand. So well does Mr. Knox like this latter sort, that he is rapidly increasing the stock, even by encroachments upon the well known and popular Wilson's seedling. In amount of yield, perhaps none exceed the Wilson, but for uniformly large size, fine flavor, firm flesh, beauty of color, together with large productiveness, he places the Triomphe de Gand at the head of the list of proved sorts. The early pickings of these often bring $1 per quart box.

Mr. Knox's soil is a clayey loam—the very best for strawberries—plowed deep and subsoiled, with a moderate amount of manure worked in. The plants are set in perfectly straight rows, two and a half feet apart, and ten to fifteen inches distant in the row, according as they are strong or weak growing sorts. Instead of letting the plants cover the ground and exhaust themselves in a few years, the runners are clipped by women and boys, as fast as they appear. This operation is somewhat laborious, but the increased product amply compensates for the labor, besides facilitating the culture. A light horse-cultivator can readily be run through, to loosen the soil and destroy weeds. In Autumn the rows are lightly covered with long straw, which serves as a winter protection. This is thrown between the rows in Spring, and keeps the soil from drying up, prevents weeds from growing, and preserves the fruit from becoming soiled. The gradual decay of the straw also enriches the ground.

Mr. K. says his average yield is about three hundred bushels of fruit per acre, but some sorts give over five hundred bushels to the acre. He thinks the plants will continue vigorous for at least eight to ten years.

The fruit finds a ready sale at Pittsburg, Philadelphia, Chicago, etc. Most of it is sent to market in quart boxes of the Hallock pattern, although some of Cook's baskets are used. He agrees with us, that some very cheap box is wanted, which may be sold with the berries, at a trifling advance on the price of the fruit. Persons passing a strawberry stand would often buy a box of fruit but for the trouble of furnishing a basket to contain it, or being obliged to return the box. The appearance and quality of the berries are also injured by changing them from one basket to another. Will Yankee inventors please make a note of this want, and endeavor to supply it?

Watch the Cucumber and Melon Vines.

That vexatious pest, the striped bug (*Galeruca vittata*), though usually most destructive to vines in June, while the growth is tender, is still active, and must be looked after. Several broods of these insects hatch out during the Summer, and their ravages continue until the end of the season. The best remedy we have found, is a brood of young chickens. Confine the parent hen in a movable coop near the vines, and insects will very soon be scarce. Or if these can not be had, visit the garden very early in the morning, before the insects are fairly awake, and take them with the thumb and finger.

Do not allow the vines to have it all their own way in growing, or they may neglect fruiting. When they have grown three to five feet, according to their natural habit, nip off the ends and thus reserve the strength for completing the fruit already started. It will also be well later in the season to remove all small specimens that have started late, and which can not come to maturity before frost. The remaining fruit will be finer. In the case of muskmelons, the unripened fruit will come into use for pickling.

Cucumbers for pickling should be gathered as fast as they grow to the proper size. If left until they commence to ripen, the flavor and firmness of the pickles will be injured, and there will also be a feebler growth of the later fruit.

A Poor Man's Pleasant Home in the Country.

It is a prevalent notion that a pleasant country residence must necessarily cost a great deal of money. As we have walked with visitors through the tastefully planted grounds of a certain neighbor, it has often amused and vexed us to hear the remark made, with a long drawn and half envious sigh, "Well, *rich* people can have such fine places, but we common folks must go without them." While the truth has been, that in most cases these grumblers were richer than the envied proprietor: they were richer, but lazier. This fine place cost the owner skillful industry, continued for many years, but not much outlay of money.

It has been our pleasure to visit lately, another residence, in a neighboring county, which is the admiration of all who see it, yet which cost but little money, and is the property of an intelligent, hard-working mechanic. The pleasure it gave, and the good example it may afford to others, induce us to give a brief account of our visit:

On alighting at the gate of this gentleman's grounds, we were not struck by the grandeur of the house, or the pretension of the gate-way; by statues, vases, or ornamental structures of any sort. None of these things were to be seen. The house was an old one, renovated and slightly modernized, with a porch on one side and a piazza on the other, and a little bow-window for plants. The fence was a simple paling, made and painted by the owner's own hands. The lawn in front was not large, but it was indeed a lawn—smooth, closely shaven, and of the finest sort of grasses, and notwithstanding the prevailing drouth, quite green. The trees were well chosen specimens of their respective kinds, evergreens and deciduous, pleasantly intermingled. Mr. Brown, the proprietor, has a strong preference for native trees over foreign, and thinks it almost a test of one's patriotism to think as he does. He is very fond of raising trees from seed, and has a little nursery of all sorts of native seedlings, from which he transplants to different parts of his grounds as occasion requires.

One feature in Mr. B.'s planting attracted our particular attention, viz.: his management of groups. Some were open and wide-spreading, others as close and dense with undergrowth, as the wildest forest. Some were set on the outskirts, with low-branching trees and shrubs and vines, and the foliage was so closely interlaced down to the very ground that the eye could not penetrate it at all. On the margins, were piled bowlders and broken masses of rocks, over which wild shrubs and vines clambered, giving the whole a very picturesque air. Gravel walks wound among these groups, frequently leading into the center of them, where were rustic seats, on which the family or visitor could sit and enjoy siestas, shielded from the sun and from all observation. This was the wildness and seclusion of the forest, in the midst of a highly dressed lawn, and within three rods of Mr. B.'s parlor.

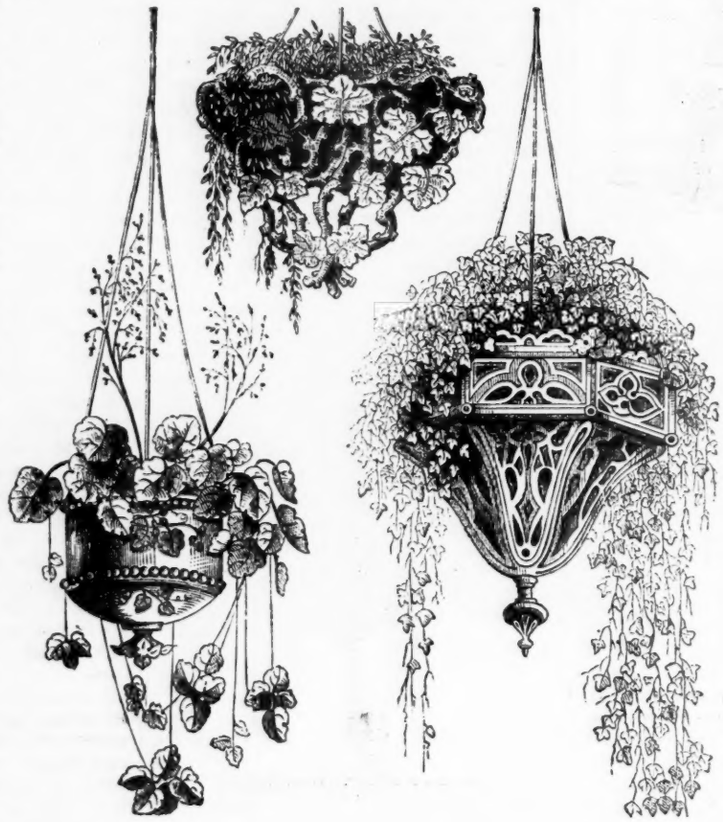
The spaces between these groups were kept mowed, and here and there were circular beds of flowers. For instance, we noticed one bed of crimson petunias side by side with one of pure white. Adjoining these ornamental grounds, but concealed by hedges, were the kitchen and fruit gardens, in which vegetables and the smaller fruits were growing in a healthful and vigorous manner that showed good care.

Leaving this part of the premises, Mr. B. conducted us along a carriage-road leading to a valley in the rear of his premises. Observing that this road was somewhat broken where it ran in a straight line, but smooth where it curved, Mr. B. said he had noticed the same thing, and had ready an explanation of it. Where the road was straight, the hinder wheels of his wagons (which were often heavy loaded) followed exactly in the tracks of the forward, and thereby deepened the rut; but where the road curved, the different wheels ran over different portions of the ground, and therefore did not cut any part badly. So, in road-making, as in many other things, utility and beauty run in the same track.

Following this road, we were soon in the

midst of a well-wooded valley, down which ran a stream broken by occasional rapids and waterfalls. At the foot of one of these falls, which was about twenty feet high, Mr. Brown had built one or two rude seats. From this point, we followed a path leading by a gentle ascent in various windings up the sides of a tree-covered hill, until we reached the top. This was not a gravel walk, but simply a wide wood-path, laid out by our host himself, and easily kept in order. This hill proved to be a ridge with several distinct eminences. On each of them the underbrush had been cleared up, and comfortable rustic seats built out of the trees and grape-vines of the surrounding forest. And now came a series of pleasant surprises. From one of these peaks, a view had been cut out through the woods in a southern direction, embracing a wide range of country, hills, valleys, streams, and scattered farm-houses. The landscape in every other direction was left purposely shut out from observation. After resting and enjoying ourselves awhile here, we followed the path down into the forest again, until ere long we turned and gained another summit. Here were home-made seats again, and another prospect, but in an entirely different direction. Before us in the distance, were two valleys converging, with their mill-streams, and factories, and villages. From this point, too, all other views were excluded. Off again, but in the direction of the valley, we followed our host's guidance among the trees, until we came upon a seat built close upon the brink of a precipice, from which all outward views were cut off by overhanging trees and wild vines, but from which on looking *downward*, almost under our feet, we saw the house and grounds of Mr. B., the repose and beauty of which were in striking contrast with the wild spot in which we were sitting. Could anything have been more charming! After enjoying this nook awhile, and listening to the musical tinkle of the stream below, we took up our line of march down into the valley, and thence to the house, where a dinner refreshed us after our long ramble.

Now, we venture to say that there are few places within fifty miles, so attractive as this. Yet it was not the property of a rich man. Nearly all these improvements were made by the owner's skillful hands, with only a trifling outlay of money. They were made from time to time, at odd hours, as a means of recreation from other and harassing pursuits, and all within the past seven years. It is true, Mr. Brown had a valley and a hill to work up, such as few possess; but then he had also a quick eye, and a ready hand, and a stout will, which seldom fail to accomplish great results anywhere. The fact is, most persons are *too lazy* to effect much; and they are glad of the chance to yawn their complaint: "Oh, if I were only *rich*, I could have a fine place!" What such men as Mr. Brown have done with limited means, and in so short a time, others may do, if they only possess a like enthusiastic love of rural pursuits, a willingness to sacrifice some other common gratifications, if need be, and perhaps to sweat a little, in order to secure a desirable object.



Ornamental Hanging Baskets for Plants.

While calling at the house of a friend recently, we were particularly struck with the air of finish that seemed to pervade the room where we were seated. The furniture was inexpensive but neat; a few choice engravings hung upon the nicely papered walls, and the window curtains were tastefully arranged; but we had often seen as well chosen surroundings without the same effect, and it was not a little puzzling at first, to decide what gave such pleasant satisfaction in the general appearance of the apartment. So we commenced noticing the details, and almost immediately found the solution of the query. A few hanging baskets, filled with growing plants in bloom, were disposed about the room, one before each window, and a larger one in the center—these gave the crowning grace. As rooms are ordinarily furnished, there is too sudden transition from the carved and polished mahogany and the elaborate wall paper, to the blank ceiling overhead: something is needed to break up the violent contrast, and what more pleasing than a few graceful trailing and climbing plants? There are many situations where these beautiful ornaments will be equally in place, as in the large hall, the openings of the veranda, pendant from the roof of the rustic summer-house, or even swinging from the lower branches of the tree in the front yard.

Hanging flower baskets may be made of various materials, and there is no lack of plants suitable to fill them. Of those represented in the accompanying illustrations, the uppermost one is of rustic work, or crooked branches of oak or other wood nailed together to form a support for the flower-pot containing the plant. The others are of terra cotta, and may be bought at most manufactories of pottery ware. Wire is a very cheap material, easily formed into the required shape to hold the flower-pot. If this be used, it should be painted green, and kept partially filled with moss to hide the pot within. Shells of various kinds are also admirable for this purpose, as was fully described and illustrated in the *Agriculturist* for April, 1859, p. 117. In whatever way the plants are suspended, they will, of course, need the same care respecting watering and drainage, as if cultivated on the flower stand. Great pains should be taken to keep the leaves free from dust. The following list of plants will afford a good selection for almost any situation. The seeds may be obtained at most seed stores, and, for house culture, be sown at any time.

Anagallis Monelli.
Campanula speculum.
Cenia turbinata.
Cereus flagelliformis.
Cochlearia.
Gramanthus gentian.
Gypsophylda muralis.
Ipomea nil, and quamoclit.
*Ivy Leaved Geranium.
Linaria cymbalaria.
Lobelia ramosa.
Mahernia incisa.
Manulea violacea.
†Maurandia Barclayana, etc.
Mesembrianthemum tricolor.
Nemesis floribunda.
Neurembergia gracilis.
Oxalis erosa—mx'd Petunias.
Portulacca grandiflora.
Silenis alpestris.
‡Saxifraga sarmentosa.
Sedum cœruleum.
Thunbergias.
Tradescantia caudata.
Tradescantia discolor.
Tradescantia zebriana.
Verbenas of various kinds.

* These are shown in the upper basket in the illustration.
† These are shown in the right hand basket.
‡ These are shown in the left hand basket.

Rose Leaf Picture Frames.

A writer in "The House and Garden," thus describes how to make a pretty, ornamental style of picture frames: "The leaves of the Multiflora or climbing rose, are best suited for this purpose, as they have a greater richness and variety of color than most of the rose family. At the time when there is the greatest variety of colored leaves, strip them from the bush, and put them to press in any old book you do not wish to use; change them as often as every other day, until sufficiently dried; then take any picture you wish—an engraving is generally used—fasten it on to a paste-board, and leave a margin the width you wish for your frame, outside the engraving. Sew the leaves on to the paste-board frame, either in knots or groups, or simply overlapping each other, and varnish with furniture varnish. When dry, suspend with cord and tassels, and you have a very pretty picture." Other leaves of variegated colors, as maple, etc., or several sorts showing different shades of green, may be used in the same manner.

Fig. 1.

Washing Day—A Clothes Dryer.

We are writing at ten A. M. on Monday. Just at this hour, there are in this country more than *four millions* of females bending over the wash-tub in exhausting labor! The thought is not startling; there are ten millions of other adult persons, male and female, hard at work, with body or mind, in other occupations. The fact that four millions are at the *wash board*, is suggestive, however. In the four million families where washing is being done this morning, the number who use anything else than the old wash-board, is so small as not to be taken into the account. The inventors of the hundreds on hundreds of patent "Washing Machines" which are as yet little used and likely to remain so, will make a note of this, and understand that there is still abundant room for the exercise of their mechanical ingenuity. There is not the smallest doubt that as soon as a cheap, convenient washing machine is invented, one which will cost but little, and prove to be decidedly superior *in practice* to the old fashioned wash-board, it will come into general use. Many tolerably good washing machines are already invented, but not one of them appears to exactly hit the universal wants of the community. We could find fault with every one we have seen. Though our own washing is mainly done with a "Metropolitan," and we like it, yet it is not perfect, and it is too costly for universal use. It is undoubtedly cheap at ten dollars; yet comparatively few families will divide its cost over washing days enough to make it *appear* cheap enough to purchase *this* year. So keep on, Messrs. Inventors, the end of your labors is not yet reached.—Then there is the wringing machine. We got one, and our people were in ecstasies over it—it saved such a world of wrenching of the shoulders, arms, and hands, and it saved the garments too from the straining of the fibers. Well, we like it just as well as ever, and we say every family ought to have one. But it cost ten dollars at first! and most families could not pay that sum for the new machine. We said so to the manufacturers and begged of them to set their wits to work to get up a cheaper implement. By the application of machinery, and changing its structure, they came down to eight dollars, and sold more machines, but, as we repeatedly told them, it was yet too costly. Now they have got down to five dollars, and we think the thing will go. It would pay the *purchaser* at ten dollars, and it must come into use at five, certainly.

Fig. 2.

Washing Fluids and Washing Powders, were all the rage a few years since. A villainous concoction of lime, potash, spirits of turpentine, etc., did up the cleansing in double quick time; but the turpentine was bad for the health of the washer; and the alkalies were exceedingly bad for the health of the garments. Most of the washing compounds are now properly numbered among the things of the past; the old fashioned compound of grease and potash, or soda, is yet the thing for the wash-tub, and likely to remain so for some time to come.

The *Clothes Line* is one of the annoying things, in the experience of nine out of ten of our housewives. If we had all the men together, we would give them a lecture which should at least set them to thinking. The poor stakes, half put up, in all sorts of places; and the half rotten "lines" consisting of five to forty odds and ends of broken bed cord, ropes, strings, etc., are far too often the only means of drying the clean linen and cotton that the good woman has spent so much time upon. Every man who does not provide a good strong clean clothes line, with good supports, and a grass covered plot, away from dust, don't *deserve* a clean shirt, nor, we like to have said, a good wife; but such a man certainly does need a good *patient* wife. A whole chapter could easily be written upon clothes lines; but everybody, at least every woman, knows the difficulties experienced in the matter, better than *we* can describe them, and the men would not read the chapter if it were written. Any housewife who has not had more than one hard day's work spoiled by the breaking down of a line, and hundreds of other pieces soiled by weather beaten cordage or flying dust, is more fortunate than nine hundred and ninety nine others of her sex. That's so. There is, however, one bright side to the picture. The amount of ingenuity and skill exercised by most women in contriving to keep the clothes lines up, with nails, pins, sticks, boards, etc., has undoubtedly done much to develop mechanical skill, and bring out latent powers of mind!

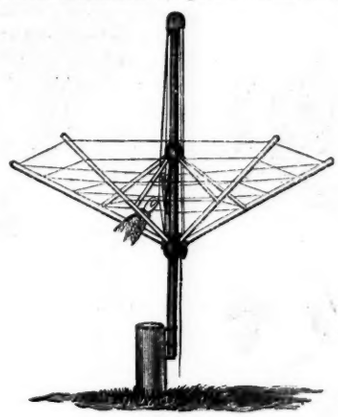


Fig. 3.

The last paragraph on clothes lines, indeed the whole subject, has been suggested by a glance out of our study window, at a new fangled "Yankee Notion," standing in the lawn, labeled "*Hawse's Patent Clothes Dryer*," which the manufacturers had the kindness to send out to us a few weeks ago. It's a good thing, indeed the finest thing of the kind we have seen, though even this is "open to objections"—so the women folks say. But they would be loth to part with it, and their verdict is, that every housekeeper should have it who has not already abundance of room, plenty of grass, and good lines. It is convenient, holds a large number of garments in a small space, is quickly folded up and carried under cover so as to preserve the cordage from being weather beaten, and can be put up ready for use in three minutes. It is rather ornamental than otherwise, and cheap, since one having 120 feet of line costs but $5½, including frame, cordage, and foot post or socket, complete. For larger sizes the cost is about a dollar extra for each 30 feet of line. The chief or only objection is, that though the garments are far enough apart to dry well, they partly shade each other, and the women say that they want the bleaching effects of the sun upon every part of each white garment. As this can be secured in very few places, especially around city and village dwellings, and the new clothes' dryer is otherwise a great desideratum, it is worthy of pretty general adoption.

The engravings, figs. 1, 2, and 3, require little explanation. Fig. 1 shows the Dryer elevated as when in use. The garments are left off in order to better exhibit the implement itself. Fig. 3 shows it when let down to a convenient hight to receive the garments. Fig. 2, shows it folded up ready for carrying in. The upright shaft is set into rings on a foot post, which stands only 12 or 15 inches above the ground, and does not disfigure a lawn or grass plot. After bringing out the frame work, and setting it in the sockets, the simple pulling of a cord raises or lowers the lines to the position seen in figs. 1, and fig. 3. The cord works in pullies so easily that a child can elevate or lower the framework when loaded with wet garments. The entire frame is so arranged upon sockets that it revolves upon the central shaft, and any part of the cordage can be easily brought around to the basket. After two months' trial, and a thorough examination of this and other apparatus designed for the same purpose, we are prepared to recommend this as the best we have seen. It is advertised in this paper by one or more parties.

Ironing Apparatus Wanted—A Fortune for Somebody.

To the Editor of the American Agriculturist.

Among your hundred thousand or more readers, is there not some one who is Yankee enough to invent an ironing machine, and make his fortune? I feel almost certain that if *men* had to do the ironing for a family, week after week, especially in Summer, they would soon get their brains heated enough to invent almost any thing. Washing day is bad enough, with its suds and slops, and hard work, and cross husbands; but half its terrors are gone at our house since we procured the Metropolitan washer, and that complete wringer. Every thing is put away snug and tidy before husband comes home on wash-day, and it is worth the price paid for those articles to see his smile of satisfaction. A few years ago some one brought out a two-story smoothing iron, with a miniature stove in its basement to contain burning charcoal, which kept the iron heated for a long time, and saved some steps in running from the table to the stove, to change irons. But it did not lessen the work of smoothing the clothes, and the charcoal fumes right under one's nose while at work, were not only unpleasant, but positively injurious, and we pronounced the thing a failure. There are what are called mangles, used in large laundries, I believe, for smoothing linen, but they are not adapted for

family work. We want something inexpensive, compact, easily worked, and which shall free us from the drudgery of standing in an uncomfortable position, over a heated surface, and laying out strength enough to last two days in ordinary work. Please, Messrs. Inventors, come to the aid of woman in this matter, and you will find a ready purchaser and a grateful friend in MARTHA.

Important Hints on Putting out Fires.

It should be firmly fixed in the mind of every man, woman, and child, that the best way to extinguish a fire is to *smother it*, that is, to shut out the access of air. If the clothes take fire, wrap them together closely, or throw around them a blanket, a sheet, another dress, a table-cloth, or a piece of carpet—anything that can be first got hold of. A newspaper, or hankerchief, suddenly spread over a flame and drawn down so as to at once shut out air, will extinguish or check the fire. It is well for children and even grown people to *practice* extinguishing a flame, by setting on fire, in a safe place out of doors, a quantity of paper or shavings, and even burning fluid, and then try how suddenly the flame may be extinguished with a cloth or paper. A little practice like this will give confidence and experience, and prevent that sudden fright and indecision which generally occur when a fire breaks out.

Where burning fluids are used, they frequently run over and take fire on the outside of the lamp. Usually, if held still, the excess of fluid will burn off with no harm. A sudden, heavy blast of breath will generally put out the flame. A cloth thrown entirely over it, will certainly put it out. Shaking the lamp through fright, or throwing it down, only makes the matter worse, by forcing out more fluid. Don't be afraid of an "explosion." It is next to impossible to explode even a burning fluid lamp. It is barely possible to do it by having the wick out of one tube, so that the flame can run down the opening; and then not one time in a thousand will there be just the right mixture of air and fluid vapor to produce explosion enough to break the lamp. There may be a little puff and report, and the dropping of the lamp in fright will throw out the fluid, or break the lamp if of glass, when of course there will be a flame, but one easily extinguished by means of a cloth. Dashing on water often scatters the burning liquid around the room, making the matter worse. Let it be remembered, that not one in five hundred of the reported "explosions" of lamps, is really an "explosion" at all. They result from spilling fluid carelessly, or *breaking* a lamp. In the fright, the fluid is perhaps dashed over the clothing, and bad burns and even death may result, especially if the person runs out into the air, and thus fans the flame. After all that has been published and said on the subject, any person who will fill a lamp while burning, or do it near another burning lamp or fire, ought to be burned—*a little.*

If a fire occurs in a room or closet, do not throw open the doors and windows, and thus fan the flame. Close every aperture instantly, until an abundance of blankets, and water, are secured, then throw open the door, and quickly smother the flame. No common substance will burn without air, except gunpowder, or nitre, or chlorate of potash, and such like compounds which of themselves furnish the oxygen to support the flame. Even phosphorus will instantly go out if simply smothered.—If these simple directions were so fixed in the mind, that a person is prepared to act coolly, nine-tenths of all the fires, the suffering from burning of garments, and the so-called lamp explosions would be avoided.

For the American Agriculturist.

"Patent Leather" Boots and Shoes.

A man with unblacked, rusty looking boots, can scarcely be well dressed. He may be honest, energetic, and every way worthy, but the first impression he makes upon strangers, will be less pleasing than if his equipment were completed with well polished leather. But it takes time and trouble to apply the blacking and brush, and manufacturers have devised a fabric to dispense with this trouble, and at the same time enable the wearer to be always presentable, so far as covering for the feet is concerned. "Patent leather," as it is called, is japanned, or coated with a varnish which retains its luster, and boots and shoes made from it, only need a slight dusting to be in trim. Hence they have become very popular; and judging from the appearance of the shoemakers' display of stock, and the numbers we meet who wear these articles, nearly one half the *dress* boots and shoes now worn, are of "patent leather." But those who buy them, pay dear for their whistle. They are uncomfortable, and positively injurious to health. Complaints are sometimes made that they "draw the sun" and heat the feet. This is an error. They absorb less heat from the outside than ordinary leather, because a polished surface reflects heat more readily than a rough one: but, for the same reason, they do retain the heat given out from the foot, and hence are uncomfortably warm in Summer. The varnish, before it is cracked by wear, is impervious to water, and hence the large amount of perspiration escaping from the foot is retained, and the flesh is thus kept steaming with poisonous vapor. In Winter, the dampness of the stocking conducts away the heat rapidly, and you have a continual cold foot bath, which every one knows, or should know, is ruinous to health. One of the golden rules for preserving health is, "Keep the feet dry, and moderately warm," neither of which can be done when using "patent leather" shoes.

It were better to appear ill-dressed than suffer from chillblains, colds, and headaches; but this need not be. Let the fastidious young men who pride themselves upon a highly polished boot, rise a few minutes earlier in the morning, and take healthful exercise with the shoe brush; it will conduce to their welfare in more ways than one. COMMON SENSE.

Get an Early Breakfast.

A bad custom is prevalent in many families, especially among farmers, of working an hour or two before breakfast, attending to "chores," hoeing in the garden, cutting wood, mowing, etc. This is convenient on many accounts, but it is not conducive to health. The prevalent opinion is, that the morning air is the purest, and most healthful and bracing; but the contrary is the fact. At no hour of the day is the air more filled with dampness, fogs, and miasms, than at about sunrise. The heat of the sun gradually dissipates these miasmatic influences as the day advances. An early meal braces up the system against these external influences. Every one knows the languor and faintness often experienced for the first hour in the morning, and that this is increased by exercise and want of food. We do not agree with the boarding school regime which prescribes a long walk before breakfast as a means of promoting health.

Probably the best custom would be, to furnish every member of the family, especially those who labor out of doors, with a simple cup of warm coffee well milked, immediately after rising from bed. Then let them attend to chores, or mowing, hoeing, etc., for an hour or two, while the teams are feeding, and breakfast preparing. They will feel better, and do more work.

For the American Agriculturist.

Good Meals for Emergencies.

It often puzzles a young housekeeper to know how to provide for unexpected guests who chance to arrive near meal time. This is the more perplexing in the country, where one can not send to a neighboring cook shop for food ready prepared. It is no compliment to company to spend the time of a visit in extra cooking, and yet one likes to have an inviting meal for friends. Let us see what may be done.

Good bread and golden butter, no farmer's wife should be without; fruits, either preserved, dried, or fresh, she is supposed to have, with eggs, cream, ham, sweet pork, and the best vegetables. Suppose a guest arrives at twelve, just as dinner is coming on, and there is no pudding baking, and only sufficient meat for a dinner, or perhaps a boiled dish, or beans with pork, are the food prepared. If the latter, delay the meal fifteen minutes, which will give time to make and bake such a cream pudding as towns-people seldom see, or a minute pudding, or custard.

For a good *Minute Pudding:* Heat 1 quart of milk over water until boiling hot. Add some sweet butter to the milk. Mix flour with cold milk and four beaten eggs to form a batter, and stir it into the boiling milk, until smooth. Let it steam over water until needed, and serve with cream and sugar, or maple syrup.—For *Cream Pudding:* Beat six eggs to a froth, mix a pint of milk with a pint of flour, and two small teaspoonfuls of salt, and just before baking, add a pint of sweet cream. Bake steadily twenty five minutes. Serve with sugar and butter stirred to a cream. If in time of fruit, instead of the above, serve peaches or berries with cream whipped stiff and sugared.

If dinner can not be delayed, serve two tables. Fry or broil ham with eggs; or *broil* thin pork—the latter is a treat to city people. If you happen to have dry cake, boil a quart of rich milk, take it from the fire, add four beaten eggs, and sugar; beat until cool. Dip the cake in a part of the custard, and beat the remainder to a foam for the top of the dish; add the beaten whites of eggs stiffened slightly, over the hot milk, and flavor to suit the taste. An excellent dessert.

If tea is the meal, and you are troubled for want of nice cake; remember, cake is no luxury in town. Toast bread nicely, drop eggs on water until the whites are coagulated; dip the toast in butter, with a trifle of hot water added, or merely spread it; cut each slice in three or four pieces, lay an egg on each, and add butter, pepper and salt. This is a nice tea dish for persons intending to ride, and with a pickle or other relish, would make a nice meal. *Cream Cake* hot, to be eaten with butter, is nice for a hurried tea, both with and without sugar. To make it: take a pint of flour, four eggs, a teaspoonful of soda, the same of salt, and thin sour cream sufficient to mix the whole in a stiff batter. Pour one cake into a pan, and add half a teacup of sugar to the other, and bake. *Muffins*

may be made in the same manner, and are more genteel. If sweet cream is to be had, mix one teaspoonful of soda, and two of cream of tartar, in the flour. With this, sweetmeats are unnecessary, though proper. Custards, at a farmer's, can be made in a few moments at any time—dished in cups, with cream cake, with and without sugar, they make a genteel tea meal, fit for a king. This is the only cake except ginger cake, that we use hot, and we are supposing there is not time for cake to cool before tea, and besides, it can be made in ten minutes.

By July, early chickens are fit to cook. If in haste, pull out the wing and tail feathers, split the *skin* on the back, and take it off, feathers and all. Fry or broil, and either for a dinner or a country supper, they will not be despised. They can be prepared in half an hour, with mashed potatoes, and cold or hot slaw, lettuce, or cucumbers. MRS. E. F. HASKELL.

Plain Directions for Keeping Fruits—Best Method of "Preserving."

The old method of "preserving" fruits, by cooking with pound for pound of sugar, thus making them exceedingly hard to digest, and seriously impairing the *flavors*, is still much in vogue. During several years past we have done what we could to point out a *better way*, and not without good results as we have reason to know; but there is much still to be said on the subject, and improvements are constantly being made. Let it be understood by all, who do not know the fact, that it is just as easy to keep the various fruits in *almost* their natural condition, as it is to preserve them in the old way, and that the new method is cheaper and every way better on the score of health and pleasure. Perhaps we can not better point out the means, and the results, than by describing our own experience for a year past. First, let us say, that we have discarded the use of tin cans. These operated well, and when carefully treated so as to avoid all rusting, they are harmless, at least if used only once or twice; but after having learned by experience that *glass* bottles are equally effective, we greatly prefer them on the score of absolute safety. The salts formed by the corrosion of tin are not pleasant to the taste, and when existing in any appreciable amount in canned fruit, they are more or less poisonous.

BOTTLES.—Last year, we procured a supply of quart glass bottles with wide necks. Some of them were common cheap glass, costing four to eight cents each, such as could be picked up at the druggists' and glass stores. A better form, which we could not get in the quantity desired, last year, were "Yeoman's Fruit Bottles." These are made with a small shoulder on the *inside* of the neck, to prevent the corks from being driven inward. A few bottles holding two quarts each were used, but the one quart size is to be preferred in most families.

CORKS—CEMENT—TIN COVERS.—Good corks, ½ to ¾ inch long, and in diameter nearly ¼ inch larger than the necks of the bottles, were provided. These are to be soaked in hot water before using, which softens them so that they can be compressed into an opening much smaller than their diameter when dry. For cement, we put into a 2 quart basin, say 3 lbs. of rosin, and a trifle over 3 ounces of tallow, and melted it together. This can be re-heated and used as often as required. By mixing a large quantity at a time, and securing the proper consistency, it is always ready for use, and what is left over one year, keeps perfectly well until the next; it can be made harder or softer as experience may indicate. For each bottle we procured a small *tin cover* or dish large enough to hold the top of the neck. Small "patty pans" costing 8 to 12 cents a dozen, are just the thing.

STRAWBERRIES.—These come first in the season. Good, ripe, but not over ripe fruit, was picked over to sort out stems and partially decayed and unripe berries. The fruit was then placed in a glazed iron, or tin vessel, and just covered with a hot syrup made with a pound of white sugar to a *quart* of water. The whole was carefully heated for a few minutes, avoiding burning, but not stirring to break the berries. In the mean time, the bottles were heated by the fire, or in water, and when the fruit was fairly scalded through, it was dipped into the bottles, making them full. The corks were then taken from the hot water where they were soaking, wiped dry, and crowded firmly into the bottles a little below the top of the necks. No air should be left under the corks. The top of the corks and the necks and tops of the bottles were wiped thoroughly clean with a warm wet cloth, and then dipped into the basin of melted cement. They were next set down into the tin dishes, as shown in the engraving, and cement dipped in until the tins were nearly full. If any bubbles of air were seen in the cement, they were closed with the spoon, and a little more hot cement. The bottles were then set away on shelves in a cool place in the cellar—it matters little whether right side up or inverted in the patty pans, or left on the side. The cooling of the contents tends to produce a vacuum, and create a pressure *inward* which binds on the tin covers firmly; and these with the cement around the neck prevents the possibility of the corks being driven in, or of the ingress of air. The whole operation, though described at length, is very simple and easily and quickly performed. More or less sugar may be used, but we prefer a pound to a quart, which makes the fruit just about sweet enough for the table.—As the *result*, we have had good nice strawberries, almost as fresh and perfect in form as when first picked, and not a single bottle has been lost. Those still on hand (June 10th) promise to be just as good at the end of another year, and perhaps five years hence.

CHERRIES are very easily kept in bottles, and come out in beautiful order. We have annually put up a large supply in cans and in bottles, for several years past, and have never lost one by fermentation or poor keeping. They preserve their flavor admirably, and the white varieties, especially, show finely when poured out into the sauce dish. One can scarcely have too many. They are treated just as described above for strawberries, but may be cooked a trifle more without breaking. The prospect is that the cherry crop will be very light this year.

RASPBERRIES.—These were put up just as described above for strawberries, and with equally satisfactory results.

RRUBARB OR PIE PLANT will make an excellent bottled sauce, especially this year, when sugars are so cheap. Peel and cut the tender stems in short pieces, stew and sweeten well, just as if for pies; then put hot into the bottles, and cork and seal as above.

WHORTLEBERRIES, OR "HUCKLEBERRIES," always keep well with us, and are good for pies, etc., at any season. Cook 10 or 15 minutes in a syrup of only ½ to ¾ lb. of sugar to a *quart* of water, and bottle hot as above.

BLACKBERRIES keep well, and are good for sauce or pies the year round. Treat exactly as strawberries, but make the syrup a little sweeter, say 1¼ lbs. of sugar to a *quart* of water. This is especially needed for the New-Rochelle, and the low bush wild varieties, which are more tart than the common wild high bush sorts.

PEACHES, AND THE SOFTER KINDS OF PEARS. Nothing makes a better or more beautiful bottled fruit than these. A little more care is needed in putting them up, to preserve their form and aroma. We peel, and halve or quarter them, and put the pieces directly into the bottle, packing them closely and full. The bottles are then sunk in a vessel of water nearly up to their necks, and heated to near or quite the boiling point. A *hot* syrup is then poured in, and the corking and sealing done as for strawberries. They should remain long enough in the vessel of water to become heated *through*, but not long enough to cook them soft, or dispel their flavor.

QUINCES, AND HARD PEARS.—These are first cooked soft—but not to a jam—in a covered vessel, using a syrup of 1 pound of sugar to a *quart* of water. Bottle hot, just as described for strawberries. If cooked soft, they will not harden in the sealed bottles as they do when preserved in the ordinary way.

PLUMS are readily preserved in bottles. The sourer varieties require rather more sugar than a pound to the quart. Plums require a little longer cooking than smaller fruits, to heat them through to the pits. The skin preserves the flavor until they break. Though they do not appear so well on the table, we prefer to have them break a little, as the syrup saturates them better.

TOMATOES.—These are cheap, and everywhere accessible; and they should be put up in bottles in large quantity by every family, as a standard sauce for the year. They lose little flavor in cooking. We peel and cook them in their own juice, without sugar, boiling them down to a thick pulp, adding salt enough for seasoning. They are then ready for the table, and also to put directly into bottles while hot, to be corked and sealed as above. The keeping depends mainly upon the thoroughness of the cooking. If not perfectly sealed, a little mold often collects upon the top, but this seldom injures the fruit, unless stirred up with it.

IN CONCLUSION, let us again advise every family to lay in a stock of all kinds of fruit accessible. Bottles of some sort can be obtained anywhere. For the smaller fruits and for tomatoes, narrow necked, junk, or other bottles will answer, if the more convenient wide necks can not be obtained. The latter are, of course, more convenient for filling and emptying, and are necessary for putting in the larger fruits without breaking.

We have made the directions as plain as possible. A little experience will enable any person of ordinary skill to put up all these fruits in bottles, where they will require less sugar, and come out more like *fruit*, than in the ordinary methods. A few losses may be experienced by the novice, but practice makes perfect, and the practice may as well be taken this year as next.

THE LITTLE 'SCARE-CROW.'—FROM AN ENGLISH PAINTING.
(Engraved for the American Agriculturist.)

The Editor with his Young Readers.

The "Scare-Crow."

There is an earnest, patient expression on the face of the little girl in the engraving. She is poor, and has been hired to keep the crows from the wheat field, by frightening them with the wooden "clapper" she holds. This is done in England. In this country, you know, a 'scare-crow' is often made by dressing the image of a man in cast-off clothing, and setting it in some conspicuous part of a field. It usually looks so ridiculous, that it is a term of reproach, when a *person* is called a 'scare-crow.' But the child in the picture, though engaged in this employment, is such a one as every body loves to look at. She is vigorous and ruddy from exposure, with an intelligent face, and an air that seems to say "I'll do my duty." If, like most of you, she had the opportunity of attending school, instead of laboring to aid her parents, she would no doubt be equally diligent and faithful there. The old couplet written by the English poet, Pope, says:

> "Honor and shame from no condition rise,
> Act well your part, *there* all the honor lies."

Remember that the way to rise to a higher station, is to be faithful in the lower place you may now fill. It is related of a former member of the Massachusetts Legislature, a wealthy and highly respectable man, that he was reproving one of his workmen for carelessness. The man answered sharply, "You need'nt be so mighty particular, I remember when you were only a little drummer boy." "Didn't I drum well, Billy?" replied the employer. If you have corn to hoe, hoe it well; or if, like the little girl in the picture, you are set to drive away crows, do it well.

An Incident of the War.

Upon the ghastly picture presented by every war, there are always many bright spots that stand out all the more vivid, from the darkness of the background. In the present strife, in which our country is unhappily involved, there have already been many interesting incidents, and an occasional one may be recorded here. One occurred at the time the Rhode Island soldiers went into Maryland. While moving westward from Annapolis, a company of men were acting as an advance guard, and becoming hungry and weary, they entered a farm-house, and asked for food. The woman was greatly frightened, and cried out: "O, take all I have; take every thing, but spare my sick husband." "O, don't be alarmed," said one of the men, "we ain't going to hurt a hair of your head, but please give us something to eat." The woman could not be pacified, but hurried a meal upon the table. The men gathered about the table, and baring their heads, a tall gaunt soldier raised his hand, offered thanks to God for the food, and invoked His blessing upon the bounties spread before them. At this, the woman broke down with sobbing, and knelt down and thanked God that she was safe. Her fears were at once dispelled, and bidding them wait a few moments, she made good hot coffee in abundance, and brought forth milk, cream, and other luxuries from a well stored cellar. While they were eating, she emptied their canteens of the muddy water they contained, and filled them with coffee. Her astonishment was still further increased when they insisted upon paying her; and on her refusal, each man left upon his plate half a dollar for his meal. The lieutenant, himself an irreligious man, tells the incident with great expression. Said he: "That asking the blessing, knocked out my underpinning; and when I saw this, and the evidently united feelings of the rest of the men in the ceremony, and their kindness to the woman, I felt that I was the officer of good, as well as brave, soldiers."

A Young Patriot.

A gentleman living in Brooklyn, related an anecdote in our hearing, which shows how the war spirit has taken hold of every body's feelings. A boy, seven years old, was greatly interested in a letter from a brother, who is with one of the regiments, describing their manner of life in the camp. When bed time arrived, instead of going up stairs as usual, he said: "Father, may I camp out to-night." "Camp out, my son, what do you mean?" asked the father. "Why camp out in the yard. I can take the wood-house for a tent, and Tom and Bounce (the cat and dog) can be sentries, and stand on guard!" His father laughed at the absurdity of the idea, but the boy insisted on it with great earnestness, and had a regular crying spell, because he was refused permission. He wanted to practice being a soldier, he said, so as to be ready to go when called on.

A Farmer Boy's Letter—A Valuable Crop.

A. J. Price, one of our young readers, writes: "Three years ago, my father gave me a quarter of an acre of ground to cultivate, and every Saturday afternoon to work it, and so raise my own spending money. It was not a very good piece, being uneven and full of briers. I planted some pop-corn, which the squirrels ate mostly; some beans, which were so few they did not amount to any thing; some melons which were small and did not last long; some peas which the mice ate up; also some squashes and onions which never came up; and last of all some potatoes, of which I raised 7 bushels, and sold 5 bushels for 5 shillings per bushel. Here, then, was over $3 spending money. That was my *first* experiment on my own account.

The next year I planted *all* potatoes, on nearly half an acre. It was a tough piece of meadow, plowed the Fall before. I had to work very hard to keep the grass down, it being rather wet. I raised about 40 bushels, 25 of which I sold for 3 shillings per bushel. The rest were small potatoes, and I let father have them for $1, which I sent for the *Agriculturist*—money well invested I think. That was my *second* experiment.

Last year I tried it again, with the same amount of land, but it was another tough piece, being a patch that had been chopped a long time, and had come up again to bushes. After much grubbing and hard work, I managed to raise 50 bushels in all—a great many rotted. I kept them until this Spring, and have sold 12 bushels for 2 shillings per bushel; 35 bushels I have on hand yet, and am likely to have for a while, as there is no sale for them here. This is my *third* experiment. If I have to give away the rest of my potatoes, to get rid of them, it will not be a very profitable one."

True enough, young friend, the potatoes may not be worth much, but you have been cultivating that which will pay handsomely. PERSEVERANCE is one of the best crops a young man can raise, and yours must have grown somewhat in the last three years. Work away, try again, and again, and then don't give it up, and ultimately you will find a field which will pay for all previous efforts. Those three years will very likely fix your character, and you may owe great success in after life, to the lesson learned in that time; then how pleasant it will be to remember those first "*small* potatoes."

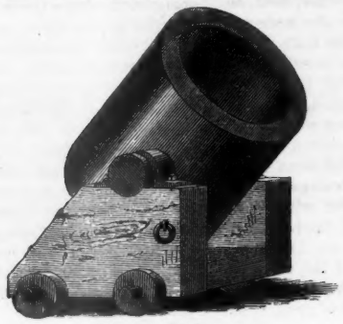


Fig. 1.—A MORTAR.

Explanation of War Terms.

As a people, we have been so long in a state of peace with all the world, that the technical terms of war are little understood. We have found ourselves somewhat at loss in this respect, as we have read of regiments, brigades, battalions, squadrons, platoons; of generals, lieutenant generals, major generals, brigadier generals, colonels, adjutants, lieutenants; of howitzers, mortars, columbiads, paixhans, caronades, dahlgreens; of shell, grape, canister, bombs, grenades; and of the hundreds of other terms of war. It occurs to us that a brief plain explanation of some of these terms will be interesting and useful to our young readers, and aid them in understanding the newspaper accounts daily perused. We will first describe some of the *implements* of war, and afterward explain the organization of an army, its officers, etc.

Gunpowder.—With this all are somewhat acquainted. It is a condensed compound which, on the application of heat, springs into a large volume of gas (or kind of air) with great power. Half a gill of powder will suddenly produce gas enough to fill a barrel, or 2000 half gills. Powder in very fine grains burns so fast and expands so quickly as to burst a cast iron gun; hence very coarse powder is used for cannon and large guns. Gunpowder is a mixture of about 6 ounces of niter (saltpeter) with 1 ounce of sulphur, and 1 ounce of charcoal. The charcoal used, is made of small willows carefully burned or heated in close vessels. The niter, sulphur, and charcoal, are ground separately, then together moist, and afterward pressed into solid cakes and dried. These cakes are broken into small fragments, which are put into cylinders and kept revolving until the sharp corners are worn off and the surface of the grains is polished, when they are passed through sieves to assort the coarse and fine grains—the fine being used for small guns, and the large for cannons, for blasting rocks, etc. The fine dust, if packed in a solid mass so that the flame can not spread easily through it, burns slowly upon one side, and is used for fuses in bomb shells and in blasting, for fire-works, etc.

Percussion Powder is composed of materials which are set on fire by the simple friction of a blow. The first guns used, were fired with a lighted match. Then a flint was arranged to strike off small bits of steel from a pan cover. These bits of steel took fire by the friction, and falling into the powder in the pan, set it on fire also. The fire burned through

Fig. 2.—A HOWITZER.

the touch-hole into the gun barrel. This took *time*, and very often a well aimed gun would be moved out of place before the powder burned enough to throw out the ball. Now, a little percussion powder placed in a copper *cap*, is ignited by a blow of the lock, and the percussion powder being very quick, the flame is driven into the barrel, and the gunpowder explodes before the gun is moved. Such guns are also surer than the old flint locks, in which not unfrequently the flints missed, or the powder got wet, or failed to burn through into the barrel.

Guns.—These are of many sizes and forms, and have different names. They consist of a tube, generally round, in the bottom of which is placed some powder, and over it a ball or a charge of shot. Generally, the powder is put down from the muzzle, either poured in loosely, or put in a bag. Soldiers carry prepared *cartridges*, which are commonly made of little paper tubes, the ball in one end, and a measured charge of powder behind it. For cannons, the powder is tied up in flannel bags. Some modern guns are arranged to be opened at the breech, and the charge is put in there. These are called *breech loading guns.*———All guns, large and small, may be divided into two classes, viz.: the *Smooth Bore*, and the *Rifled Bore*. At first, all were made smooth-bore; then hunter's rifle-bored guns, or "rifles," were made; but muskets, shot-guns, and cannons were still retained with smooth barrels; then rifled army muskets were made, and just now they are making rifled cannon. The scare so much better, that it now seems strange that they have not always been made so. It is impossible to cast a lead or iron ball so that it will be equally heavy in every part, and exactly fit a gun barrel. When a gun is fired a few times, it expands by the heat, so as to be too large for the ball. When a ball is sent through the smooth barrel, it moves from side to side, and when it goes out into the air, one side happening to be a trifle the heaviest, it keeps moving off to that side, which may chance to be up or down, or to the right or left, so that it is next to impossible to send it exactly straight forward. If its forward end or side be irregular, it will dart off a little to one side or the other as it cuts through the air.

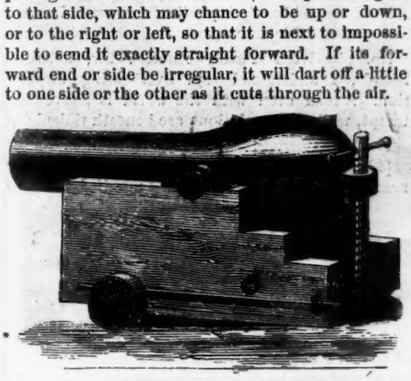


Fig. 3.—A COLUMBIAD OR PAIXHAN.

The Rifle Bore prevents this difficulty thus: On the inside of the barrel are little groves, or railway tracks, so to call them. These do not run straight along the barrel, but spirally around it. Thus, if one of these grooves begins at the upper side of the breech of the barrel, it gradually winds around to the bottom or to one side, and in very long guns the grooves go nearly or quite around, but generally only about half or three quarters of the way round so as to turn the ball once in from five to ten feet. When lead balls are used, the sides of the ball are forced into these grooves, and when driven out, the ball is given a rotary motion, that is, it moves along just as if it were a bead sliding on a string, and kept turning *around the string* at the same time. The great advantage of this is, that the inequalities in the weight and shape of the ball are turned, now to this side, now to that, now up, and now down, and the ball is thus varied as much one way as the other, in other words it goes *straight forward*. The balls can also be made long and pointed, which enables them to go through the air better, with less resistance in proportion to their weight.

RIFLED CANNON.—In the old smooth-bore cannon the iron balls could not be made to fly exactly in a straight line. The same gun aimed in the same direction, would vary the ball from side to side of a mark, several feet in shooting a mile or less. By rifle boring the barrel, a good gunner can now hit a man a mile or two, or as far as he can be sighted. As iron cannon balls can not be pressed into the grooves, a ring or cup of lead is put on the back part of the ball, and this on firing is expanded or forced into the grooves, which not only gives the ball its rotary motion, but the lead also stops up the space around the ball, and prevents the escape of gas, thus giving greater power to the powder. The space necessarily left between a solid iron ball and the barrel, is called the "*windage.*"

DIFFERENT KINDS OF CANNON.

Mortars.—These are short, stout guns, having a large bore (See fig. 1). They are not set upon wheels, but upon a heavy low framework, and are used for throwing heavy balls and shells high in the air, to *fall down* upon fortifications, into forts, towns, etc. They are too short to throw a ball horizontally against the side of a wall. Owing to

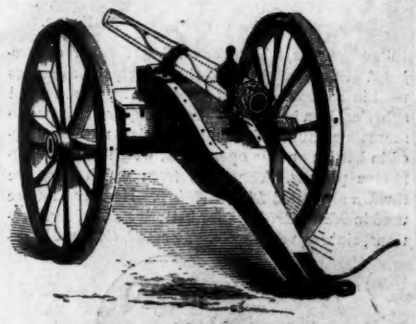


Fig. 4.—A WHITWORTH GUN.

their shortness, they are comparatively light in proportion to the large ball or shell which they carry.

The Howitzer, (fig. 2,) is longer than the mortar, and carries a smaller ball or shell. The powder chamber back of the ball is smaller than the rest of the barrel, in which it differs from other cannons. *Mountain Howitzers* are merely Howitzers of light weight, which can be easily carried over mountains.

A Carronade is like the howitzer, but differs from it in being fastened to the carriage by a loop of iron under the middle, instead of resting on "trunnions," or projections from the side. It is named from Caron, a village in Scotland, where it was first made.

The Columbiad, (fig. 3,) differs from the howitzer in having no chamber, the bore being of equal diameter throughout. It is also made much thicker at the breech than at the muzzle, which gives great strength to that part of the piece where the principal force of the powder is exerted, so that lighter cannon of great bore, for large shells, can be cast in this form with less danger of their bursting. Both solid shot and shell are fired from the Columbiad. Our engraving shows the most recent, improved form; the older Columbiads tapered regularly from the breech to the muzzle.

The Paixhan is only another name for the Columbiad, and is so called from Gen. Paixhan, of France, who introduced the invention from America into the French army.

The Dahlgreen Gun, somewhat resembles the Columbiad. It is used for firing both solid shot and shell. It is named after Captain Dahlgreen of the United States army, who devised it.

The Whitworth Gun, (fig. 4,) is a rifled cannon, loaded at the breech. It carries a long conical ball, (fig. 5,) cast with projections on its sides to fit the grooves of the gun. The breech is screwed off, when the load is put in, and then screwed on again for firing.

Fig. 5.

The Armstrong Gun is also a rifled piece. Its principal peculiarity is in the ball used, which has bands of lead cast upon it, to fit the grooves. It is somewhat objectionable for field use, because these bands are apt to fly off, and kill those standing near the gun when it is discharged.

PARTS OF A CANNON, ETC.—*Muzzle.*—The mouth, where the ball leaves the piece. *Breech.*—The end where the fire is applied. *Caliber.*—The size of the bore. *Cascabel.*—The knob at the extremity of the breech. *Chamber.*—The smaller cavity at the bot-

tom of the bore. *Trunnions.*—Projections from the sides of the cannon, to support it on the carriage.

Fig. 6.—*r*, ROUND SHOT—*g*, GRAPE SHOT—*b*, BAR SHOT—*c*, CHAIN SHOT—*m*, MUSKET BALLS.

PROJECTILES, signify any thing thrown or *projected*. Shot and shell are the principal projectiles used in cannon. *Round Shot*, (*r*, Fig. 6,) are solid spherical iron balls, of different weights, from two to more than a hundred pounds. The sizes most employed in battles on the open field, weigh from four to twelve pounds. The guns from which they are thrown are called *Light Artillery*. Heavier shot are used in *Heavy Artillery*, for battering down fortifications, sinking vessels, etc. *Bar Shot*, (*b*, Fig. 6,) consist of two round shot joined by a solid bar, like a dumb-bell. *Chain Shot*, (*c*, Fig. 6,) are two round shot linked together by a chain. These are used mostly for firing at vessels, to destroy their masts and rigging. *Grape Shot*, (*g*, Fig. 6,) are small iron balls bound together in a canvas bag. They are usually arranged around an iron spike, somewhat in the form of a bunch of grapes. *Canister* or *Case Shot*, (Fig. 8,) are iron bullets enclosed in a tin box or case. *The Common Shell*, or *Bomb*, (Fig. 7,) is a large hollow sphere of iron, filled with powder. A fuse is attached, which takes fire and burns slowly until the shell reaches the point aimed at, and then explodes the shell and scatters the fragments. In the improved shell, the fuse is made of powder ground fine, enclosed between two metal plates, and fitted to the opening in the shell. The inner plate has an opening leading to the powder within the shell, and the outer one is marked with the figures 1, 2, 3, 4. Before the gunner puts it into the cannon, he pierces the plate at one of these figures, at 1 if he desires the shell to explode in one second, at 2 for two seconds, and so on. *Shrapnell* or *Spherical Case*, are large hollow shot filled with lead bullets, and containing a small charge of powder, to which a fuse is attached. When fired, the powder just breaks the shell in the air, and the bullets fly on with the impetus received from the powder in the cannon, but "scatter" so as to cover a considerable space. *The Carcasse*, is a shell pierced with several holes and containing some highly inflammable ingredients, which are set on fire by the burning fuse. It continues to send out flames for several minutes, and is used for setting buildings or ships on fire. Round shot are sometimes heated red hot and fired for the same purpose; and recently hollow, thin shells filled with melted iron, have been used. *The Hand Grenade*, Fig. 9, is a small thin shell filled with balls and powder, and fitted with a fuse. It is thrown by hand, the fuse having first been lighted. It is used to drive off attacking parties from a fort or vessel, to throw over breast works, or into forts, and is a formidable weapon.

Fig. 7.—A SHELL.

Fig. 8—CANISTER.

Fig. 9.—HAND GRENADE.

The above is all we have room for now. Next month we will describe soldiers' equipments, the organization of an army, its officers, etc.

New Problems.

No. 15.—*Interest and Discount Question.*—Here is a question that came up in an actual business transaction, which has puzzled several of our friends. A number have tried their hand at it, but no two exactly agree. It would seem like a simple matter, and we submit it to our readers: Mr. B. has a mortgage of four years on the farm of Mr. H., for $4,000, at 7 per cent interest, the interest to be received semi-annually. Being in want of money, Mr. B. offers to sell the mortgage to Mr. M., at such a reduction that his investment shall give him ten per cent interest, the interest to be reckoned annually. How much ready money must Mr. M. pay to Mr. B.?

No. 16.—*Arithmetical Question*—Contributed to the *Amer. Agriculturist* by Eli Phillips: How many ounces of *lead* weigh as much as a pound of *gold*?

No. 17.—A military letter written in *cypher*, that is, by using other letters of the alphabet in place of those which spell the word. Try to read it:

Vhqg zlwkrxw ghodb wkuhh uhjlphqw'v ri lqidqwub wr dohadqguld zlwk udwlrqv iru wkuhh gdbv.

Answers to Problems in June No.

No. 11.—*Enigma. Answer:* Chusan-rishathaim, found in Judges, iii chap., 8th verse. The name signifies "the blackness of iniquity."

No. 12.—*Arithmetical Question. Answer:* 7 cows, 21 sheep, and 72 geese.

No. 13.—*Word Puzzle. Answer:* Sir, between friends, I understand your overbearing disposition. A man even with the world is above contempt, while the ambitious are beneath ridicule.

No. 14.—*Charade. Answer:* Hemisphere.

[58 correct answers received to the above; the names we have not room for this month.]

STANDING PREMIUMS
For 1861. Vol. XX.

☞ In selecting articles for premiums, we have aimed to get such as are *useful* and as have been most frequently called for by our readers. ☞ WE WISH IT DISTINCTLY UNDERSTOOD *that these premiums are offered in good aith—no cheap, trashy, imperfect, poorly made or second-hand thing, will be sent out, but each article offered, is the best of its kind, and every one will be selected by the publisher from the very best manufactured. They will be the best sold in the market at the prices named.*

☞ We offer nothing *or competition.* Each premium is for a specified number of subscribers, and no one's remuneration will depend upon what other unknown persons are doing. Every one aiming for a premium, knows just what he or she, is working for; and also that if a higher premium is not secured, a lower one can be taken.

☞ The premiums are offered for subscribers for Volume XX (1861), *whenever received.* Canvassers will have time for completing their lists, but the premium will be paid as soon as any list is made up—if duplicate lists are sent, to refer to at once. ☞ Clubs need not be confined to one P. O.

Premium A.

130 Subscribers at 80 cents each, (or **90** at $1 each,) will entitle the person getting up the club to one of *Wheeler & Wilson's* best **$45 Sewing Machines,** (including **Hemmers**) new from the factory, and of the very best make. There is no better family machine than this made, as we have proved by three years' use in our own family. We want no better.—The machines will be selected new at the manufactory, be well boxed, and forwarded without expense to the recipient, except for freight charges after leaving the city. Full instructions for setting up and using, go with each machine.

Premium B.

130 Subscribers at 80 cents each, (or **90** at $1 each,) will entitle the person getting up the club to a set of *Appleton's* **New American Cyclopædia,** now in course of publication, consisting of *fifteen large volumes of* 770 pages each. This is a magnificent work, forming a whole library embracing every topic of human knowledge. Twelve volumes are now ready, and the remaining three will be furnished as fast as issued. Price, $45.

Premium C.

98 Subscribers at 80 cents each, (or **69** at $1 each,) will entitle the person getting up the club to one of *Willcox & Gibbs'* **$35 Sewing Machines,** including a set of **Hemmers.** This is the best machine of its kind, (sewing with one thread), and has several points superior to others. It is neat, well made, simple in its operation; and having tested one for some time past in our own family, we can recommend it to those who can not afford to buy the higher priced double-thread machines. (The regular price of this machine is $50, but we have included in our offer $5 extra for the set of *Hemmers*, because those used with this machine are very simple and effective, and should go with every one sent out.) The machines given as premiums, will be selected new at the factory, be well boxed, and will be forwarded to the recipient free of expense, except for freight after leaving the city. They will go out set up ready for use, with printed directions for operating.

Premium F.

50 Subscribers at 80 cents each, (or **36** at $1 each,) will entitle the person getting up the club to one of the best **$8 Straw and Hay Cutters.** [If preferred, the best **$8 Subsoil Plow** (two-horse) will be given.]

Premium H.

40 Subscribers at 80 cents each, (or **31** at $1 each,) will entitle the person getting up the club to one of the best **$6½ Hand Corn Shellers**—a convenient, effective, and useful implement.

Premium L.

30 Subscribers at 80 cents each, will entitle the person getting up the club to an assortment of *Windsor & Newton's* **Water Color Paints**—consisting of 12 colors, put up in a neat mahogany case, with brushes, etc. These Paints are imported from London, and are by all considered the best in the world. They are adapted to the finest work, or they will make a neat and appropriate present to any of our younger readers. They will be sent post-paid any where within 3000 miles. (If to go to the British Provinces or to the Pacific Coast, the recipient will need to send 84 cents for extra postage above the 6 cents per ounce which we pay.) See also Premium **M**, last month, page 186.

Premium N.

10 Subscribers at 80 cents each, will entitle the person getting up the club to any *one* of the four previous unbound volumes (16, 17, 18, or 19,) sent post-paid.

Premium O.

237 Subscribers at 80 cents each (or **125** at $1 each) will entitle the person getting up the club to one of *Geo. A. Prince & Co.'s* **$75 Melodeons** (5 octaves). These Melodeons are of very superior tone and finish. We have ourselves used one (costing $150) for two years past, and it has given the highest satisfaction, and is pronounced by all who have heard it, as one of the very best. The different priced instruments are of equally good tone—the price varying with the size and style of finish. The size, prices, etc., of these instruments can be learned particularly by sending a stamp to Geo. A. Prince & Co., Buffalo, N. Y., for an illustrated descriptive catalogue. The instruments given as Premiums, will be sent new directly from the factory at Buffalo, ready boxed, and without extra expense to the recipient, except for freight after leaving the factory.

☞ The above premium list may be made up by the members of a congregation, or Sabbath School, and an instrument thus secured for a church or school-room.

Premium P.

182 Subscribers at 80 cents each (or **105** at $1 each) will entitle the person getting up the club to one of *Geo. A. Prince & Co.'s* **$60 Melodeons** (4⅓ octaves.) See remarks above.

Premium Q.

130 Subscribers at 80 cents each (or **90** at $1 each), will entitle the person getting up the club to one of *Geo. A. Prince & Co.'s* **$45 Melodeons** (4 octaves.) See remarks above. **N. B.**—Higher priced Melodeons will be given for larger lists, in the same proportion.

Time and Place of Fairs Wanted.

Some Agricultural Societies are talking of postponing their usual annual exhibitions this year. This is not wise, as a general thing; we need now as much as ever the advantages to agriculturists and households, of these annual gatherings. The officers, or members of the different State and County societies will confer a favor by sending to this office *at as early a date as possible*, the time and place of the next exhibition, for publication.

Market Review, Weather Notes, etc.

AMERICAN AGRICULTURIST OFFICE,
New-York, Tuesday Morning, June 18, 1861.

The following table presents a condensed view of the business transacted for a month past. These figures are carefully compiled from daily notes; our commercial reporter, who has had many years experience, spends the whole of each day in the market.

TRANSACTIONS AT THE NEW-YORK MARKETS.

RECEIPTS.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
24 days *this* month	379,400	3,820,000	3,197,000	86,450	69,600	365,000
25 days *last* month	304,000	1,122,000	755,000	19,850	93,000	317,000
SALES.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	
24 days *this* month	388,500	4,168,000	3,904,000	40,700	21,000	
25 days *last* month	434,000	2,350,000	1,555,000	73,450	84,750	

By this month, we of course refer to the month running back 24 *business* days from this date. A glance at the above figures shows very heavy transactions in Breadstuffs, both in receipts and sales. The 379,400 bbls. of flour received, is equivalent to 1,897,000 bushels of wheat, which added to the 3,820,000 bushels of wheat received, make a total of 5,717,000 or nearly *six million bushels of wheat* received in twenty four days. The receipts of corn have been very large also, running up to nearly 3¼ million bushels against ¾ million bushels for the previous

month. The *Sales* of Wheat and Corn have been correspondingly large, though wheat has been in greater demand than flour for shipping. The amount of wheat and flour disposed of, is equivalent to *six million* one hundred thousand bushels of wheat.....Since the beginning of the year, the receipts at this port, mainly from the interior, have been very large, amounting in five months, from Jan. 1, to June 1st, to 1,163,000 barrels of Flour, (last year 885,000 bbls.); 4,246,000 bushels of Wheat, (last year 774,250 bushels); 3,208,000 bushels of Corn, (last year 2,828,000); 47,000 bushels of Rye, (last year 56,000 bushels); 442,000 bushels of Barley (last year 232,000 bushels); 848,000 bushels of Oats (last year 1,016,000 bushels).....The *Exports* from this port, for the same period of five months ending June 1st, contrast still more remarkably with last year, thus: exports this year 989,000 barrels of Flour (last year 365,000 bbls.); this year 5,706,750 bushels of Wheat, (last year only 739,712 bushels); this year 4,084,000 bushels of Corn, (last year 924,000 bushels).....Reducing the flour to wheat, we have exported from this City alone, in five months ending June 1st, 10,651,750 bushels of Wheat against 2,584,712 bushels last year, or an excess of 8,067,038 bushels this year. These are the official figures made up three weeks ago, and the excess has been largely increased since that date.....The stock of *Flour* here at present, is very moderate, but the large current receipts, with the local production, are equal to the wants of buyers. The supplies of *Wheat* and *Corn*, especially of common and poor lots, are large. Though the export trade has been brisk during four weeks past, especially of Wheat and Corn, the very liberal arrivals have made holders eager to sell, and a considerable reduction in prices has taken place. A week ago, the marine insurance offices made an attempt to charge an extra war rate of premium, amounting to 5 per cent on all property shipped to Europe in American vessels, as it was apprehended that there was danger to our commerce in the partial recognition by Great Britain of the right of the Southern States to authorize privateering. This movement seriously disturbed the market, and, for a brief period, prostrated business completely. The "*Underwriters*," (as the chief officers of the insurance companies are called,) have since reduced war risks to 1 per cent, which is in addition to the usual rate of 1½@2½ per cent. Many shippers, however, are paying the usual rate only, as a protection against ordinary hazards, assuming the risk and chances of war themselves, as they entertain no fears of Southern privateering, especially since the whole Southern coast from Virginia to Texas is now effectually blockaded, and the latest advices from Europe place it beyond a doubt that the Great Powers of the old world will exclude privateers and prizes from all ports within their jurisdiction; it is, indeed, positively known that England and France have resolved to do so. This cause of anxiety having been removed, attention is now being generally directed to the growing crops, and the prospects of the harvest. The extraordinary condition of the country renders the question of an adequate supply of food one of universal importance. Fortunately, the exports from nearly all portions of the Union are quite encouraging, in this respect. The crops in the North and South, especially in the North, are spoken of, as being excellent. Southern accounts, however, complain of the damage which the army and cut worms have done to corn, but the injury has not been sufficient to give adequate foundation to the belief that the crop will be short, especially as a great deal more land has been planted this year than in any former season. The wheat in the extreme South is now about all harvested, and consequently, out of harm's way; but in Virginia, Kentucky, and Tennessee, it is yet susceptible of rust, and is liable to damage by weevil; but we have thus far heard of no serious complaints growing out of either cause. Grass in the North is uncommonly vigorous, and has passed all danger of being injured. But little, comparatively, of this commodity is raised in the South, and hay will be very scarce there, as the usual shipment of Northern bale hay to that region is precluded. The cotton, sugar, and rice crops we hear but little about, and can therefore give no idea concerning their prospects; but the reasonable inference is that they will all be short, except, perhaps, the yield of tobacco in Kentucky, owing to the peculiar position in which the States raising these articles have been placed. From a general review we are led to the opinion that with fair growing weather the rest of the Summer, the corn crop of the entire country will be greater this year than ever before; that wheat, rye, barley, and oats, will be fully up to the average, and that the production of hay will be unusually large....The Cotton market has not been active, but as arrivals have mainly ceased for this season, and the stock here has been reduced to a very low figure (less than 40,000 bales in all), prices have advanced slightly, and close with an upward tendency.... Quite an extensive business has been transacted in domestic Tobacco, partly on speculation, at full prices. The prospect of protracted warfare in the South is regarded as lessening the chances of even a moderate crop..... Sugars have recently risen in price and been in active request.....Rice has been quiet.....Provisions have been dull and heavy, though prices have been reduced materially... Hay has declined in value, having been in very limited demand. Shipments to the Southern States are forbidden, and holders have mainly to depend on the local consumption....The movements in other branches of trade have been restricted.

Exports from New-York, January 1, to June 12.

	1860.	1861.
Wheat Flour, bbls	397,358	1,038,453
Rye Flour, bbls	4,209	5,428
Corn Meal, bbls	42,888	41,433
Wheat, bushels	861,622	6,345,255
Corn, bushels	1,137,325	4,369,513
Rye, bushels	100	72,293
Barley, bushels	8,280	1,000
Oats, bushels	98,464	91,376

Receipts of Breadstuffs at Chicago, Jan. 1, to June 11.

	1861.	1860.	1859.
Flour, bbls	509,876	201,330	170,381
Wheat, bushels	3,801,900	1,587,425	1,175,283
Corn, bushels	6,862,155	6,569,931	2,030,241
Oats, bushels	307,358	508,987	303,491
Rye, bushels	152,658	58,790	22,646
Barley, bushels	289,980	183,636	111,571

The aggregate quantity of Breadstuffs left at tide water at Albany, from the commencement of navigation to the 7th of June, inclusive, during the years 1860 and 1861, is as follows:

	Flour, bbls.	Wheat, bu.	Corn, bu.	Barley, bu.
1860	185,520	1,008,084	2,996,744	73,013
1861	111,486	3,985,497	2,824,051	99,645
Decrease, 74,034 Inc.		2,977,413	Dec. 172,693	Inc. 26,632

By reducing the Wheat to Flour, the quantity of the latter left at tide water this year, compared with the corresponding period last year, shows a gain of 521,448 barrels of Flour—equivalent to 2,607,240 bushels of Wheat.

CURRENT WHOLESALE PRICES.

	May 20.	June 12.
FLOUR—Super to Extra State	$3 00 @ 5 80	$4 50 @ 4 95
Superfine Western	4 95 @ 5 10	4 45 @ 4 60
Extra Western	5 15 @ 7 50	4 62½@ 7 25
Fancy to Extra Genesee	5 40 @ 7 50	5 00 @ 7 25
Super. to Extra Southern	5 75 @ 8 75	5 65 @ 9 00
RYE FLOUR—Fine and Super.	3 00 @ 4 00	3 00 @ 4 00
CORN MEAL	2 85 @ 3 25	2 85 @ 3 10
WHEAT—Canada White	1 38 @ 1 57½	1 40 @ 1 85
Western White	1 35 @ 1 75	1 32½@ 1 60
Southern White	1 45 @ 1 78	1 40 @ 1 70
All kinds of Red	1 14 @ 1 32	90 @ 1 30
CORN—Yellow	56 @ 62	46 @ 50
White	58 @	46 @ 56
Mixed	53 @ 55½	36½@ 45
OATS—Western	31½@ 32½	28 @ 31
State	32½@ 33½	31½@ 32½
Southern	29 @ 31	Nominal.
RYE	66 @ 67½	68 @ 69
BARLEY	55 @ 70	50 @ 65
HAY, in bales, per 100 lbs	85 @ 90	45 @ 75
COTTON—Middlings, per lb	13½@ 14¼	14 @ 14¾
RICE, per 100 lbs	5 50 @ 6 50	4 50 @ 6 50
HOPS, crop of 1860, per lb	14 @ 21	12 @ 22
FEATHERS, Live Geese, p. lb	None selling.	Nominal.
SEED—Clover, per lb	8 @ 8¾	None selling.
Timothy, per bushel	None selling.	do.
SUGAR—Brown, per lb	4 @ 6¾	4½@ 7
MOLASSES, New-Orleans, p.gl.	30 @ 35	30 @ 35
COFFEE, Rio, per lb	10¼@ 13¼	10½@ 14
TOBACCO—Kentucky, &c, p.lb	3 @ 15	4 @ 15
Seed Leaf, per lb	4 @ 25	3½@ 25
WOOL—Domestic fleece, p. lb	28 @ 55	28 @ 55
Domestic, pulled, per lb	22 @ 38	22 @ 38
TALLOW, per lb	9 @ 9¼	8¾@ 9
OIL CAKE, per tun	Nominal.	29 00 @34 00
PORK—New Mess, per bbl	17 25 @	15 50 @15 75
Prime, new, per bbl	13 00 @	10 50 @10 75
BEEF—Repacked mess	10 00 @11 00	8 75 @10 25
LARD, in bbls., per lb	9 @ 9¾	8½@ 9¾
BUTTER—Western, per lb	11 @ 15	9 @ 13
State, per lb	13 @ 17	10 @ 15
CHEESE	4½@ 9	3 @ 8
EGGS—Fresh, per dozen	8 @ 9¼	12 @ 14
POULTRY—Fowls, per lb	12 @ 14	12 @ 14
Chickens, Spring, per pair	75 @ 1 00	62 @ 75
Turkeys, per lb	12 @ 14	12 @ 14
Wild Pigeons, per doz	1 00 @ 1 25	1 00 @ 1 25
APPLES, Prime, per bbl	2 00 @ 2 50	2 00 @ 2 50
Medium, ₱ bbl	1 50 @ 1 75	1 50 @ 1 75
Dried Apples, per lb	2 @ 3	2 @ 3
Dried Peaches, per lb., peeled	10 @ 12	10 @ 12
Dried Cherries, pitted, per lb	10 @ 11	10 @ 11
Dried Raspberries, per lb	10 @ 11	10 @ 11
POTATOES—Mercers, per bbl	2 25 @ 2 62½	1 50 @ 2 00
Peach Blows, ₱ bbl	2 00 @ 2 25	1 75 @ 2 00
Bermuda, new, per bush	4 00 @ 4 50	5 00 @ 5 50
ONIONS, New Bermuda, ₱ bbl		1 50 @ 2 00
Onions, do. hampers, ₱ lb		1¾@ 2¼
TURNIPS, New, per 100 bunch		2 00 @ 3 00
TOMATOES, Bermuda, p. 4-qt	50 @	50 @ 75
ASPARAGUS, per doz. bunches	1 25 @ 2 50	75 @ 1 00
Asparagus, Oyster Bay, do		2 50 @
RHUBARB, per 100 bunches	2 00 @	2 50 @ 3 00

N. Y. Live Stock Markets.—THE CATTLE MARKETS have been fairly supplied during the month, but more medium cattle could have been sold to neighboring graziers for further feeding. Pasturage is very abundant, and many farmers along the Hudson River and Harlem Railroads would buy cattle to feed, could they get them at about 4¾c. ₱ lb, live weight, for smooth, good fleshed steers of 700 lbs each. The supply for 4 weeks past, numbered 16,796, or 4,199 per week—varying but little from the previous month. The demand usually falls off somewhat at the beginning of the strawberry season, but with some thousands of soldiers quartered near the City and others passing to the seat of war, the drain upon the New-York cattle market is heavy, and prices are as high as they were one year ago. The supplies for Washington and vicinity are sent direct from the West, for which government has been paying 8c. ₱ lb, live weight delivered. Prices at Forty-fourth street, ranged, at the last market, from 9c. to 9¼c. per lb. estimated weight of the dressed quarters for prime bullocks; 8c.@8¾c. for fair; and 7c. to 7¾c. for poor, with an average of 8¼c. for all kinds sold.

VEAL CALVES.—Receipts about as last month, or 1,013 per week. Prices rule low, say at 3½c.@4¼c. ₱ lb. live weight, except for a very few extra fat calves which sell for 5c. Trade dull. Most of the calves now sent to this market should be reared upon the farm.

SHEEP AND LAMBS.—Since the lambing and shearing season, sheep have come in more freely, the receipts being 35,103 for the month, or a weekly average of 8,776. With near 11,000 offered for the past week, the market was very much depressed and prices low. Good sheep sold at 4c. @4¼c. per lb. live weight, and medium stock 3½c. Market over supplied. There is a fair demand for *good* Spring lambs at $5 50 @ $4 50 per head.

LIVE HOGS.—Receipts have fallen off materially during the warm weather, only 5,370 per week coming in during the month, but the demand is small and prices have declined nearly 1c. per lb.—good corn-fed hogs now selling at 4¼c. and still-fed hogs at 3¾c. per lb. live weight.

The Weather, until this week, continued cool and wet, making the season backward and discouraging to Northern farmers. Corn is small, but should we have settled warm weather, as now indicated, a bountiful harvest may be gathered.——OUR DAILY WEATHER NOTES, condensed, read thus: *May* 19, clear, fine, rain at night—20, rain—21, to 24, clear, fine—25, rainy A. M., clear, warm P. M.—26, clear, warm, heavy thunder shower at night—27, heavy showers, P. M.—28, clear, cool, rain at night—29, cool—30, 31, clear, fine.——*June* 1, 2, clear, warm—3, rain A. M., clear, hot P. M., thunder showers at night—4, showery—5, cloudy A. M., clear P. M.—6, very heavy rain, 2.80 inches water falling—7, cloudy A. M., clear and fine P. M.—8, clear A. M., showers P. M.—9, clear—10, clear, hot, 80° in shade, thunder showers at night—11, heavy thunder showers, with hail—12, to 15, clear, warm—16, showers, then clear and cool—18, fine, but cool. The amount of rain that has fallen at Washington Hights, this City, for 30 days past, measures 4.59 inches.

Thermometer at 6 A. M., New-York.

[Observations carefully made upon a standard Thermometer (Fahrenheit.)—*r* indicates rain—*s*, snow.]

MAY.

1	47*r*	8	54	14	54*r*	20	48*r*	26	56
2	34	9	47	15	55	21	48	27	60*r*
3	36*r*	10	47*r*	16	54	22	50	28	53
4	38*r*	11	46	17	47	23	52	29	51*r*
5	39	12	50	18	47	24	51	30	49
6	44*r*	13	55*r*	19	46	25	52	31	53
7	50								

Average.....49

JUNE.

1	56	4	64*r*	7	56	10	62*r*	13	64
2	61	5	57	8	61	11	66*r*	14	60
3	59*r*	6	50*r*	9	60	12	65	15	65

Circulation of the Agriculturist.

Beyond all doubt or controversy, the circulation of the American Agriculturist to regular subscribers, is many thousands greater than that of any other Agricultural or Horticultural Journal in the World, no matter what its character, or time or place of issue. The publisher is ready at any and all times to substantiate this statement.

Advertisements.

Advertisements to be sure of insertion must be received at latest by the 15th of the preceding month.

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GRAZING FARM WANTED.—From 30 to 60 acres, with farm buildings, fruit trees, etc., at about $100 per acre, cash down, located on Long Island, near New-York. Those having such farms for sale will please address, with particulars, "Farm," care of *Agriculturist* office, 41 Park Row, New-York.

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Such as Flour, Butter, Cheese, Lard, Provisions of all kinds, Grain, Eggs, Poultry, Game, &c., &c.

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I. S. CLOUGH, Depot 220 Pearl-st., New-York, sign of the Golden Weather-Vane. Manufacturer of THE CLOCK WORK, LIGHT HOUSE, FLY TRAP, a perfect *Nero* at Fly Killing. Farmers now use the flies to feed hens with, being valued as high as corn, by the bushel. —*Report of the American Institute, Farmer's Club.*

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SECOND EDITION.—Thirty pages of New Matter, with the experience of 1860 and '61, being the most important part of the work. Indispensable to all GRAPE GROWERS. Sent by mail, free of postage, on receipt of the price, 50 cts., in stamps. Address, WILLIAM BRIGHT,
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N. C. MILLER, PUBLISHING AGENT, OF BOOKS Sold Only by SUBSCRIPTION, and of BOOKS, etc. Salable by TRAVELING AGENTS, in the exciting times of 1861. Catalogue mailed free.
No. 25 PARK-ROW, NEW-YORK.

Fig. 1—"GIANT WHEAT."

The above engraving, prepared for our March number, is an exact copy of one appearing in the English journals. Almost incredible accounts of productiveness of this Wheat were given, and we sent to our English correspondent to procure a quantity and forward for our distribution. Two bushels were obtained at a fabulous price, and we have been distributing it in small parcels for experiment. We should have sent the whole of it away, had we known just how many parcels would be called for, and how much could be put in each. The little now remaining we shall distribute, with another variety described below, as premiums. We do not credit the half that is said of this wheat, though the accounts are given in a leading agricultural journal, published where the wheat is grown, and where they might be easily exposed, if unreliable. But if this wheat prove a fourth part as valuable here as it is represented to be in England, it will be decidedly worthy of cultivation. The experiment will cost but little, and is worth a trial. If successful, those who raise the first seed in quantity will be ahead in this market.

Fig. 2.—"HALLETT'S PEDIGREE NURSERY WHEAT."

We present in Fig. 2 a fac simile of an engraving of another variety of wheat, which was brought before the public in England, last Autumn. This engraving was placed beside a glass case of the *heads*, at the Show of the Smithfield Club, last year, and the public invited to compare them, and no one disputed the accuracy of the representation. Mr. Hallett states that a single kernel planted, produced 39 heads, containing **2145** kernels. As soon as we saw the statements concerning this Wheat, we at once sent for a quantity of it to add to our free Seed Distribution, notwithstanding the enormous price asked for it, but our Correspondent could only get a small lot. There was not enough to offer in the general distribution, and it was too costly for that purpose. We shall, therefore, reserve a little for our own experiment, and offer the rest that we have as a special premium, as named below. We can only say of this, as we have said of the "Giant Wheat," above, that the claims put forth for it are too large to fully credit; though it would seem to be of unusual value, and it will cost little to test it here. Mr. Hallett claims to have "bred up" this wheat from the size shown in Fig. 3, by careful selections from year to year. Those who obtain the specimens of this, or the giant wheat, or both, will do well to plant the kernels separately, in drills, in a good soil, to the end that as large a yield as possible may be secured, should these varieties prove worthy of future cultivation. Plant or sow at the usual time of putting in Winter wheat.

Fig. 3—AN ORIGINAL HEAD.

THE WHEAT PREMIUM.

To any one who will now procure and forward a new subscriber to the *Agriculturist*, at $1 a year, we will send (post-paid,) a parcel of *each* of the above varieties of wheat—one parcel to contain, say about **400** kernels of the "GIANT WHEAT," and the other about **600** kernels of HALLETT'S PEDIGREE NEW WHEAT. This amount of seed (1000 kernels,) will produce a large supply for another year.

TURNIP SEED PREMIUM.

As this is the season for procuring turnip seed, and it is important to raise as many as possible this year, we offer a Special Premium of some excellent turnip seed, which will be particularly valuable to those who can not get a supply of good seed more conveniently or cheaper.

To any one who will now procure and send a new subscriber for the *American Agriculturist*, at $1 a year, we will present A QUARTER OF A POUND of the BEST TURNIP SEED. The seed will be forwarded free of charge, (post paid). This amount of seed will suffice to plant from one-fourth to one half of an acre, according to the care exercised in sowing.

☞ *For other Premiums, see last page of this number; also page* 218.

TWO CONVENIENT PAPER FILES.

We have on hand a supply of two excellent paper files, made expressly to fit the *Agriculturist*, for the convenience of our subscribers who desire to preserve the successive numbers of this journal in regular order and ready for reference.

The first, and most perfect, is the Portfolio Cover, resembling a neat book cover, provided with cord, needle, and India rubber spring, by means of which the numbers are quickly fastened in, almost as firmly as if full bound. The covers are stamped, and have the name of the paper printed on. When one volume is complete, the numbers can be stitched together in a volume, and the cover used for the next volume. It is the perfection of a newspaper file, combining the advantages of an adjustable file, and a bound cover. Prices, 60 cents, 75 cents, and $1, according to the material, style, etc. If sent by mail, 21 cents extra for postage.

The second, is a convenient *cheap* wood file, which clasps the papers at the back, holding them about as firmly as if stitched together. This is the most convenient and perfect newspaper file, for its price, that has yet been invented. We have them made just to fit a volume of this journal. Price 15 cents. If sent by mail, 12 cents extra for postage.

BAROMETER PREMIUM EXTRA.

The Barometer is very useful for the Haying and Harvesting season, to assist in foretelling the approach of storms. The one offered in our Standing Premiums, (page 218,) will be continued for this month, (July,) and *for this month only*, on the same terms as the Large Dictionary, viz: for 10 new subscribers now sent in at $1 each—good money. The instrument is well packed for being carried anywhere with entire safety, by Express, or otherwise.

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The subscriber would respectfully inform the public, that at the suggestion and particular request of a number of gentlemen (including the Editor of the *American Agriculturist*) he has opened at

42 Park Row, New-York City,
(under the Publication Office of the N. Y. Daily Times,)

A Purchasing and Commission Agency,

for the purpose of receiving and executing orders from those who may wish any article which they can not conveniently obtain direct from known reliable dealers; such as:

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Agricultural and Horticultural Implements, Good Fertilizers, Fruit and Ornamental Trees and Plants, Seeds, Household Articles—in short, anything to be procured in New-York City and at other accessible points.—Special attention will also be given to procuring **Sewing Machines.**

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REFERENCES.

TO WHOM IT MAY CONCERN.
New-York, March 20th, 1861.

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FORT EDWARD INSTITUTE,

Rev. Joseph E. King, A. M., Principal.
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Fall Term commences August 22, 1861.

Fort Edward, a pleasant and rapidly growing village of upwards of two thousand inhabitants, is situated on the Saratoga and Whitehall Railroad, seventeen miles north of Saratoga Springs. The site of the buildings, on the bank of the Hudson River, overlooking the village and an extensive stretch of beautiful country, is pleasant, airy and healthful in an eminent degree.

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The buildings are of brick, and were erected in 1854, at an expense, including furniture, fixtures, apparatus, and library, of $65,000.

It claims to be unsurpassed by any Seminary in the land in the following respects, healthfulness of location and adaptation of buildings to purposes of education, thoroughness of instruction in *all* the departments, high average intellectual and moral character of students, and rates of board and tuition as compared with quality. Three professors and teachers are devoted exclusively to the common English studies, two each to Mathematics and Classics, one respectively to Commercial Instruction, to Natural Science, to Modern Languages, and to Painting, while three have in charge the department of Music. Rare facilities are thus afforded to prepare for TEACHING, COLLEGE OR BUSINESS.

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To the admission fee, $4.50, [included in the above $36.00,] as a basis is added, for each branch of Higher Mathematics, 75 except for Surveying, $2.00; [each branch of Mental and Moral Science and English Literature, $1.00; each Natural Science, 1.00, [except Natural Philosophy, 1.25, and Chemistry, 2.00]; each Ancient Language, 1.25; and each Modern Language, 4.00.

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Piano or Organ, two lessons per week, with use of Instrument	$12.00
Vocal Music, Sacred or Glees, per course of 21 lessons	1.25
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Students furnish their own lights, mirrors, washbowls and pitchers, towels, soap, brooms, and, if they choose, curtains and carpets.

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☞ **For further references see new Catalogue. Apply to the Principal, Fort Edward Institute, N. Y.**

JAMES L. HAVEN & CO.,

No. 177 West Second street, Cincinnati.

OFFERS TO FARMERS AND OTHERS

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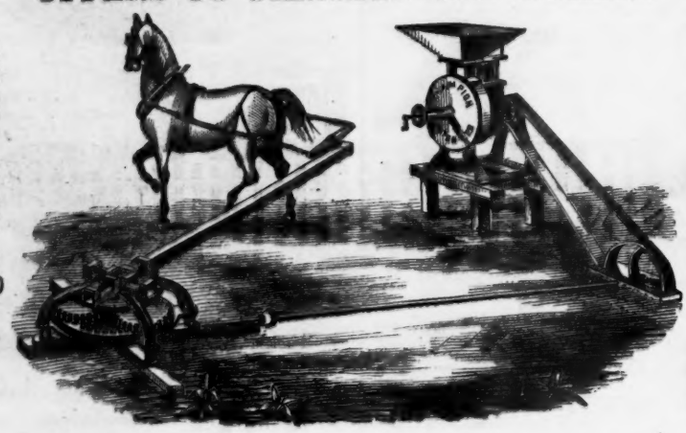

Corn-Cob and Shuck Mills.

Price of 13-inch Mill.....$45
Price of 16-inch Mill.....$50

Price of Two-horse Power....$45
Price of Four-horse Power....$60

Julius Rouse, Florence, Boone Co., Ky. "I have ground from twenty to thirty bushels of corn and cob feed PER HOUR."

William Clark & Co., St. Louis, Mo. "Your Mill, for the purpose of grinding corn for cattle is far superior to all which have come within the range of our experience."

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Spencer & Prescott, Portage, Wood Co., Ohio. "We grind from fifteen to twenty-five bushels of feed per hour, and with some kinds, thirty-five bushels per hour."

Willard & Co., manufacturers of Terra Cotta, Cincinnati, Ohio. "We are using your Mill to grind broken Terra Cotta or burned clay. It grinds very well indeed. Terra Cotta pieces are very hard and difficult to grind."

J. C. Shroyer, Cincinnati,. "I have had in use for the last twelve years various kinds of Iron Mills for grinding Drugs, Spices, &c., and I consider the 'Champion' has no equal."

John Weighel & Son, Cincinnati. "For grinding Snuff, and general grinding of Tobacco, we find it to perform to our full satisfaction."

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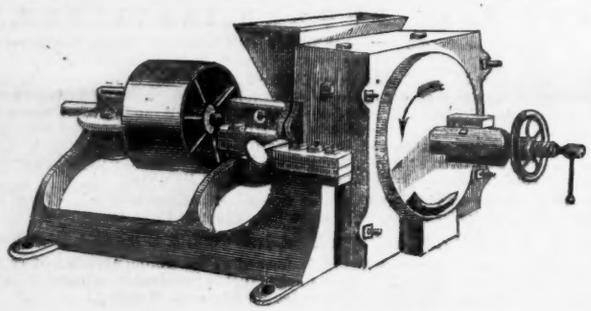


French Burr MILLS.

Are the best Mills in use for Millers. They will grind with one-third less power than any other Mill, and are adapted for Wheat, Rye, Buckwheat, Corn, Salt, Drugs, Coffee, Charcoal or Stone Coal—are easily set up and kept in order, do not require any attention after starting, and any one can run them.

They are the Mill for Saw Mills, as they grind well with unsteady power, and with horse-power, will grind 8 to 10 bushels per hour, of corn, with two horses.

Price of No. 4 Mill, ready for use, $120.00.

N. S. & John Lane, Wheatland, Mich. "They are the best thing we have ever seen—will grind the fastest with the least power. We ground from twelve to sixteen bushels per hour, where grain was in good order."

A. C. Kirwan, Navy Mills, Memphis, Tenn. "I have been using four Conical Mills ...and find them capable of doing more and *better* work than was recommended." (Threw out Flat stones.)

M. Hough, Johnstown, Licking Co., Ohio. "Can make a better quality of meal on it than any Flat Burr Mill I ever have seen, and saw at the same time."

John W. Hunt, Salisbury, Tenn. "It is the best Mill in the State."

John Bradshaw, Jessamine Co., Ky. "Every farmer who has a (horse) power, would do well to get one, as I would not be without mine for $500."

S. H. Bradford, Brownsville, Tenn. "With my Horse-power, it ground at the rate of ten bushels per hour."

Hawkins & Thornton, (Drug and Spice Mills,) Louisville, Ky. "Save, every time we grind a job (of cinnamon), $5 00 in time, besides the waste."

G. D. Snow & Co., Medina, Ohio. "We can't feed oats and barley as fast as it will grind. In short, it is a horse to grind."

Cyrus Walker, Dakota, Ills. "I ground 45 bushels of splendid meal in 8 hours," with "20 pounds pressure on my small engine."

W. W. Rochelle, High Hill, Tenn. "My Mill is all right—it performs finely."

Julius Rouse, Florence, Boone Co., Ky. "Have been running Conical Burr Mill for two years, and am well pleased with its work....takes less power than I expected."

W. A. Dudley, Lexington, Ky. "Continues to give satisfaction."

Jas. K. Pelton, La Grange, O. "I certainly do get the credit of making the best flour they ever had in their houses."

☞ We are extensively manufacturing the above MILLS and HORSE-POWERS, and would invite the attention of purchasers.

Address all Orders to the only Manufacturers,
JAMES L. HAVEN & CO.,
177 West Second street, Cincinnati, Ohio.

To those who prefer them, we are prepared to furnish the very best flat stone mills in use, viz:

STRAUB'S PATENT (LOWER RUNNER) GRIST MILL,

"QUEEN OF THJE SOUTH,"

of which there are several thousands in use throughout the United States. Also, everything pertaining to the business—from Steam Engine to Mill Pick. Full descriptions and prices mailed free to all applicants.

J. L. H. & CO.

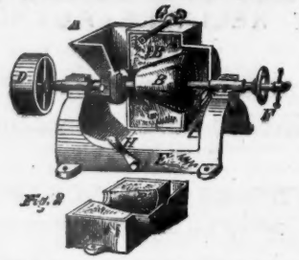


Fig. 2

EXCELSIOR MILL

FOR FARMERS AND MILLERS.

The grinding surfaces of this Mill are BURR STONE, of conical form, (see Cut above,) so adjusted that the finest flour and the coarsest feed may be ground with the same Mill. Any person can dress the stones with an ordinary pick in one hour. Will grind 3000 bushels of grain before requiring to be redressed, and

WILL LAST A LIFE TIME.

With Horse Power, our *smallest Mill* will grind from 12 to 15 bushels of feed the hour; if run by Water or Steam Power, from twenty to twenty-five bushels.

Price of No. 1 Mill for Farmer's use.....$100
Price of No. 2 Mill for Miller's use..... 140
Price of No. 3 Mill for Miller's use..... 170

The undersigned also make a *Wire Bolt* for No. 1 Mill, with which Farmers living at a distance from mills are enabled to make their own flour. Price $50.

ANTI-FRICTION HORSE POWER.

FOR DRIVING FARM MILLS, THRESHING MACHINES, COTTON GINS, CIRCULAR SAWS, MOULDING AND PLANING MACHINES, LATHES, ETC., ETC., ETC.

This power has proved itself to be the best ever invented. The friction is reduced by IRON BALLS, so arranged in all the bearings, that the whole weight of the castings runs upon them. THREE AND A HALF pounds draught at the end of a ten feet lever, will keep it in motion! More than TWENTY FIVE PER CENT of horse flesh is saved, over ANY OTHER POWER IN USE. It is simple in construction, and not liable to get out of order.

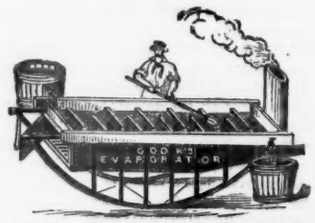
Price of Power for 1 or 2 horses.....$125
Price of Power for 4 or 6 horses..... 175

Call and examine them, or send for Circular.
Agents wanted. County and State Rights for sale.

BENNET BROTHERS,
42 and 44 Greene-st., near Canal, New-York.

$1,000,000 SAVED!

COOK'S PORTABLE SUGAR



EVAPORATOR.

One Million Dollars were saved to the North in 1860, by the use of this Machine, and yet this was only the second year of its introduction. The 2000 farmers who used them last Fall, and the ten times that number of neighbors who had their cane worked up by them, are ready to testify to their unrivalled superiority over all other devises for the manufacture of Sorghum Syrup and Sugar. Communications of the Press by the hundred could also be arrayed, did not the reputation of the machine, already acquired, render it unnecessary.

PRICES.

No. 2 Pan, 45 by 72 inches, galvanized iron..... $45 00
Same size, copper..... 65 00
No. 3 Pan, 45 by 90 inches, galvanized iron..... 55 00
Same size, copper..... 75 00
No. 4 Pan, 45 by 108 inches, galvanized iron..... 65 00
Same size, copper..... 85 00

For those wishing a cheaper Evaporator, we will furnish the pan alone for setting upon an arch.

PRICES FOR PAN ONLY.

No. 2,	galvanized iron	$25 00	No. 2,	copper	$45 00
No. 3,	do.	do... 31 00	No. 3,	do.	56 90
No. 4,	do.	do... 37 00	No. 4,	do.	67 00

Send for a pamphlet with instructions for cultivating and manufacturing the Sorgho.

BLYMYERS, BATES & DAY, Mansfield, Ohio.

TERRITORY FOR SALE.

In consequence of the rapid increase in our business, and our inability to do justice to all parts of the field, we will sell a portion of Territory. Those wishing to purchase will please address BLYMYERS, BATES & DAY,
Mansfield, Ohio.

RUSSIA OR BASS MATS, SELECTED EXpressly for budding and tying, GUNNY BAGS, TWINES, HAY ROPES, &c., suitable for Nursery purposes, for sale in lots to suit by D. W MANWARING,
Importer, 248 Front-st., New-York.

BOOKS FOR FARMERS AND OTHERS.

[Any of the following books can be obtained at the office of the *Agriculturist* at the prices named, or they will be forwarded by mail, *post paid*, on receipt of the price. Other books not named in the list will be procured and sent to subscribers when desired, if the price be forwarded. All of these books may well be procured by any one making up a library. Those we esteem specially valuable, are marked with a *.]

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American Farmer's Encyclopedia	4 00
American Weeds and Useful Plants*	1 50
Allen's (R. L.) American Farm Books*	1 00
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Every Lady her own Flower Gardener	50
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Upon the Horse for Three Dollars.

Herbert's (Henry Wm.) Hints to Horsekeepers...$1.25

A COMPLETE MANUAL FOR HORSEMEN; Embracing:

How to Breed a Horse.	How to Physic a Horse.
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And Chapters on Mules and Ponies. By FRANK FORRESTER, with additions, including BAUCHER'S SYSTEM OF HORSEMANSHIP; also, giving Directions for the Selection and Care of Carriages and Harness of every description, from the city "Turn Out" to the Farmer's "Gear," and a brief Biography of the eccentric Author. *Illustrated throughout.*

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CONTAINING PRACTICAL OBSERVATIONS ON THE CAUSES, NATURE AND TREATMENT OF Disease and Lameness of Horses, embracing the most Recent and Approved Methods, according to an enlightened system of Veterinary Practice, for the Preservation and Restoration of Health. With illustrations.

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A TREATISE ON THE MANAGEMENT OF HORSES, in relation to Stabling, Grooming, Feeding, Watering and Working, Construction of Stables, Ventilation, Appendages of Stables, Management of the Feet, and of Diseased and Defective Horses. By JOHN STEWART, Veterinary Surgeon. With Notes and Additions, by A. B. ALLEN, adapting it to American Food and Climate.

Sent free upon the receipt of the price.

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☞ Agents wanted in every County, to whom liberal terms will be made.

I WANT 100 SMART MEN (unemployed) to sell WAR BOOKS! Sure to sell fast and large profit given. Address GEO. EDWD. SEARS, 181 William-St., New-York.

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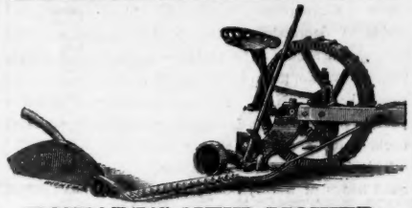
CLASS BOOK OF BOTANY, being Outlines of the Structure, Physiology and Classification of *Plants*, with a Flora of the United States and Canada, by Alphonso Wood, Principal of Female Academy, Brooklyn. Price $2.

This, without doubt, is the most thorough and practical text book ever published. A. S. BARNES & BURR,
51 and 53 John-st., New-York,
Publishers of National Series of Standard School Books.



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Price Reduced for 1861.

The cheapest, most durable, and lightest draft Mower offered for sale. Four sizes, $70, $85, and $100 each, all are warranted—can give the testimonials of those who have used them if desired. Send for circular giving full description.

KETCHUM'S COMBINED MACHINE, IMPROVED, price, as usual, $130. Improvements of guards, shoe with roller, and lever with roller and extras, for the Ketchum Machine, furnished at moderate prices, by giving the number of the machine for which they are wanted. Address
R. L. HOWARD, Buffalo, N. Y.

MOWING AND REAPING MACHINES.—The best ever made for one and two horses, and at prices corresponding with size.
R. L. ALLEN, 189 and 191 Water-st., New-York.

Select Turnip Seed—By Mail.

In consequence of the great reduction in postage on seeds, the subscriber will now mail to any address in the Union the following varieties of Turnip Seed at the prices annexed—

postage prepaid	*per oz.*	*per 8 oz.*
Improved White Flat Strap Leaved	8 cts.	35 cts.
Red Top Flat do. do.	8	35
Yellow Aberdeen	8	35
Golden Ball	8	35
Large White Norfolk	8	35
Orange Jelly	8	35
Yellow Finland, extra fine	15	65
Teltow, or Small Berlin	15	65
Long White, or Cow Horn	8	35
White Tankard	8	35
Long White French, extra fine	10	45
Ruta Baga, Skirvings Purple Top	8	35
Ruta Baga, Laing's Improved	8	35
Waite's Eclipse Purple Top, yellow hybrid	8	35
Dale's Hybrid, green topped yellow	8	35
Early Stubble Swede	8	35

Remittances may be made in current bills or postage stamps, or coin.

Descriptive Catalogues of Flower and Vegetable Seeds mailed to all applicants enclosing a three-cent stamp.
Address B. K. BLISS, Springfield, Massachusetts.

Strawberries! Strawberries!

"By their fruits ye shall know them."

What Strawberry shall I plant? Why! the Wilson's Albany.—Why? Because it is the most productive, the largest, and finest berry out. In fact it is the "fashionable" berry.

Originated at the Albany Nursery, where plants can be procured by addressing JOHN WILSON, Albany, N. Y.

Price per 100 plants	$1
do. 1000 do.	$8

Liberal discount to the trade.

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Manufactured by WM. SELPHO,
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Chester County Pigs.

The undersigned continues to execute orders as heretofore, for his pure stock of the above, which will be carefully shipped to any point of the Union.

The selections are made only from pure bloods, and chiefly from premium animals, which have been uniformly successful at our local Fairs. He refers to purchasers from him in all sections of the Union.

PASCHALL MORRIS, Agricultural and Seed Warehouse,
1120 Market-st., Philadelphia, Pa.

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Orders will now be received for these bees to be delivered at once. A circular will be sent to all applicants enclosing a stamp. In it will be found the terms, and also reports from Mr. Langstroth, Dr. Kirtland, Mr. Brackett, Mr. Baldridge, and others, testifying fully, from actual observation, to the great superiority of this race over the common bee. S. B. PARSONS, Flushing, N. Y.

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[*For other Business Items, see page* 197—*For valuable Seed Premiums, etc., see page* 220—*For Standing Premiums, see page* 218.]

EXTRA BOOK PREMIUMS.

Our "Extraordinary Premiums" closed July 1st, but owing to depression in the book business, we have been able to secure a few valuable works at such prices, that we can offer them, for the month of July, on the terms named below. (N. B. Two new subscribers for *half* a year, say from July to December, inclusive, at 50 cents each, may be counted as one new subscriber at $1.)

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Agricultural Department at Washington.

Our reference to this Department last month, page 189, has called forth several letters of approval from intelligent public spirited gentlemen who express a wish that the matter should be followed up. That there *has* been a great perversion of the funds appropriated to that Department, is not to be disputed. Take a single item as an example: For the large number of seed bags used, a party in Washington has been receiving **$4.00** per thousand, and the contractor has claimed that this was only for the *making*, not including the paper! We have obtained more than a million similar seed bags in this City, taking them in quantities as wanted, at considerable *less* than **$1** per thousand on the average. Comment is unnecessary. So much for the *past*. We have recently had a lengthy conversation with the *new* Superintendent of the Agricultural Department of the Patent Office, Dr. Erie Locke, of Indianapolis, and after hearing his purposes and plans, we confess to a reasonable hope that there is to be a great change for the better, and we shall be ready to give full credit for all improvements made and good done. It is of course unfair to tax a new administration with the delinquencies of the past one, if a clean sweep be made of all former employees who have not proved themselves to be efficient and reliable. Dr. Locke, though personally unknown to us, enters upon his important labors with our heartiest good wishes, and unless we shall hereafter find cause for a contrary opinion, we shall be ready to believe that the Department under his care will become what it can and ought to be, an agency of vast good to the agricultural interests of our country.

Reliable Crop Reports Needed.

Our readers in various parts of the country will confer a favor upon the public generally, by furnishing careful, reliable reports upon the state of a few of the principal growing crops in their several localities. These reports should not be founded upon the condition of a particular farm, which may be better or worse from special causes, but refer to a whole neighborhood, town, or county, and, when practicable, be the result of a free conversation among a number of intelligent, observing farmers. The following are model reports, (filling in the blanks, and varying to suit each case):

July 5, —— P. O., ——County, Ohio. Reported by——. *Wheat*—One fifth more sown than last year; slightly winter-killed; few insect ravages yet; condition rather better than this time last year. *Corn*—One-fourth more planted than last year; put back by wet Spring; nearly as promising as last year. *Hay*—An unusual growth, nearly twice as much as last year; Clover somewhat winter-killed. *Potatoes*—Planted full as largely as usual; appear well. *Fruit*—A fair show of apples; few peaches.

Aug. 10, —— P. O., —— Co., Ill. Reported by ——, *Winter Wheat*—about three-fourths last year's surface sown, and yield a little less per acre than last year, gathered in good condition. *Spring Wheat*—Nearly double last year's surface; midge not prevalent this year; army worm appeared in a few localities for the first time; yield about the same as last year. *Grass*—1¼ times as large a yield per acre as last year; three-fourths gathered in good condition; one fourth damaged by wet weather. *Potatoes*—one-fourth more planted than last year put back by Spring rains. *Fruit*—Not much grown; apple trees about half full, growing finely; no peaches.

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N. B.—Hereafter, until further notice, sums of $5 and upward, whether in gold, silver, bills, or stamps, can be sent to us through any office of the *United States Express Company* (and this company *only*), at our expense.

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